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The image features a decorative border with ornate scrollwork and floral motifs. In the center is a circular emblem with a laurel wreath. Inside the wreath, the text "GOOD'S" is at the top, "FAMILY" is in a central rectangular box, and "FLOUR" is at the bottom. Radiating lines emanate from behind the central text.

GOOD'S

FAMILY

FLOUR



A highly ornate decorative border surrounds the central text. It features a variety of floral elements, including bell-shaped flowers, tulips, and roses, as well as fruit like apples and pears. The border is composed of intricate scrollwork and leaf patterns, with a small plant in a pot at the bottom left and right corners.

GOOD'S

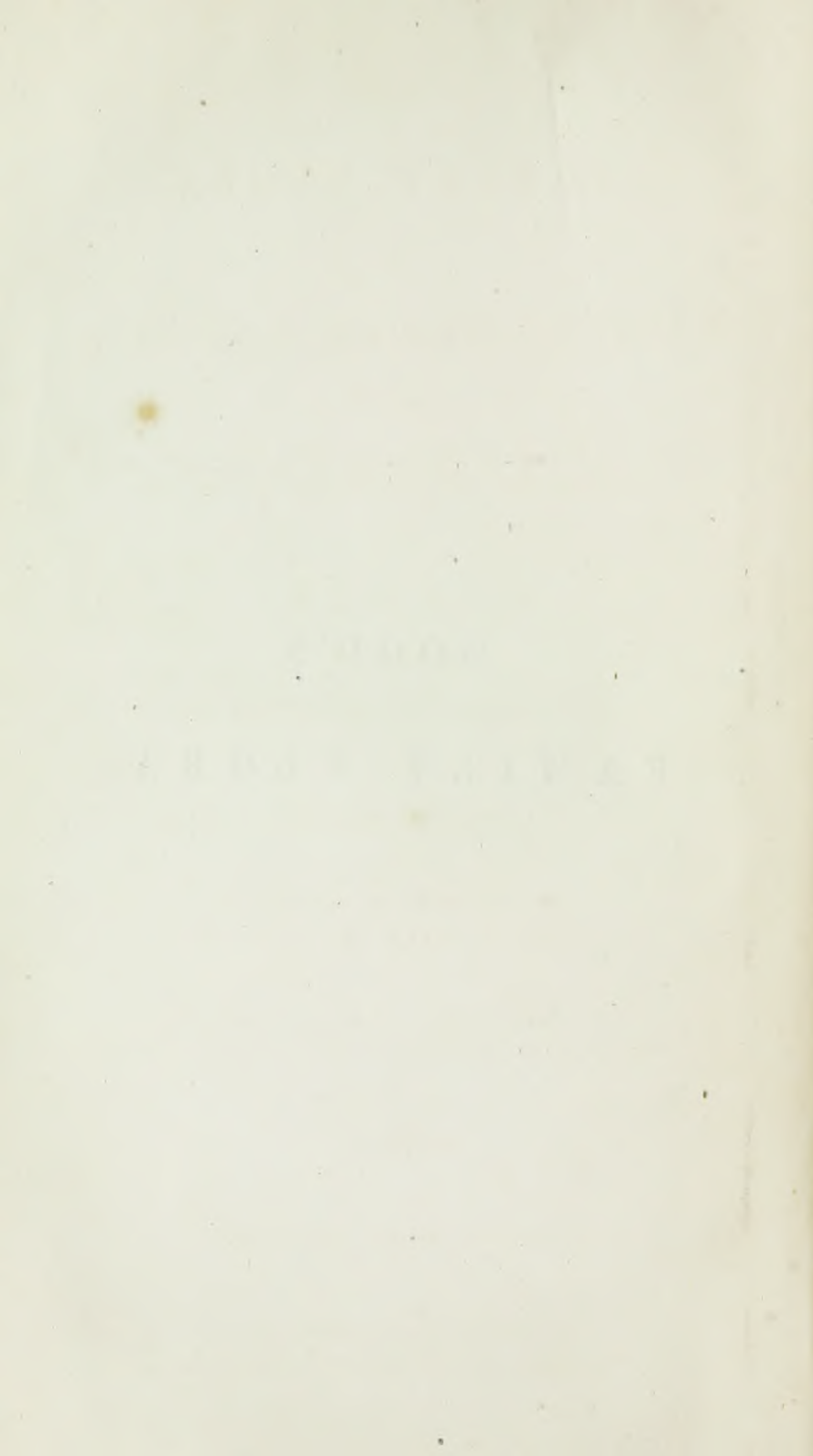
FAMILY

WEDNESDAY



GOOD'S

FAMILY FLORA.



THE
FAMILY FLORA
AND
MATERIA MEDICA BOTANICA,
CONTAINING
THE BOTANICAL ANALYSIS, NATURAL HISTORY, AND
CHEMICAL AND MEDICAL PROPERTIES AND USES
OF
PLANTS.
ILLUSTRATED BY
COLORED ENGRAVINGS
OF
ORIGINAL DRAWINGS, COPIED FROM NATURE.

By PETER P. GOOD,
EDITOR OF THE MATERIA MEDICA SPINARIA.

*Kαταμύθου τῆ ἐπιστ. τῆς αἰθέρης· ἐν αὐτῇ, αἰὲς ἔσται. Αἴψα δὲ ἔσται,
αἰὲς ἀλλομένη ἐν αὐτῇ τῇ δόξῃ αὐτῇ ἀποσβέσσειτο ἐν τῇ αἰῶνι.—FROM THE
CRUCIF.*

VOLUME I.

A NEW EDITION, REVISED AND ENLARGED.

CAMBRIDGE, MASS.:
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PREFACE.

IN preparing the work now given to the public, the earnest endeavor of the writer has been to produce a book which would be both read and studied, not only by those devoted to the medical profession, but by those also who, without the stimulus of professional predilections, have simply the desire of attaining the knowledge of medical plants, in order to the safe and effectual administration of them. He wished to make it what its title indicates, *A Botanical Materia Medica*. He designed it not so much for those who devote their lives to its study and practice, as for all others, who would make its general acquaintance an interesting object of study, which, on account of its extensive bearings upon the social and family interests, is so important and necessary.

With these objects in view, the writer has sought to relieve it of its dryness, not by shunning its technical language, but by both using and defining it in such connections as shall enable general readers to understand it. Any attempt to treat upon the science of Botany, without using its well-defined and time-sanctioned terms, would be to divorce it from the instruments universally employed in its analysis, its description, its study, and its use.

The botanical description of each plant embraces those characteristics which botanists have fixed on, as the only means by which a plant that is not familiar to the reader of an account of it can with certainty be known; and these descriptions are given in the language employed by modern botanical writers. This method of discovering a plant by comparisons derived from a few particulars, and these of the most striking kind, is certainly an agreeable and noble exercise of the understanding.

The Natural History of each plant introduced in this publication embraces only a general and familiar account of whatever does not properly come under the Botanical Anal-

ysis; and as this division of the subject is more particularly calculated for the general reader, it is hoped, with the colored pictures, there will be no difficulty in identifying the several plants described. This study of plants possesses one very eminent advantage, — it doubles the pleasures of every walk and journey, and calls forth to healthy exercise the bodily as well as the mental powers.

For the chemical and medical department, recourse has been made to every work of reputation to which access could be had; and as much useful information regarding each of the plants treated of has been brought together, as could be conveniently crowded into a small space. We are often placed in situations, in which it may be highly important to be able to recognize the vegetable which yields a particular medicine, and we are so constantly liable to imposition from the collectors of herbs, that the necessity of possessing the means of distinguishing, by infallible marks, the various vegetable products of the earth, will be readily recognized.

The labor of preparing this work has not consisted so much in elaborate research for material, as in selecting and condensing the essential parts of widely extended and minutely ramified subjects, and giving to them consecutive arrangement and obvious connection. How far this object of the writer has been accomplished in the present undertaking, a candid public must determine. So far as the subjects, when selected and arranged, are capable of simplification, it is to be sought in definition, analysis, and synthesis. The definitions should be exact in their parts, and full in their comprehensions; the analysis should be complete in its general and its elementary divisions; and the synthesis in its combinations, its generalizations, and its rules.

So far as style of composition tends to render the subject of this publication accessible, it is accomplished by divesting it of its useless verbiage, reducing its involved periods, and reaching entire precision in the selection and use of language. Distinctness of conception is best aided by lightness of drapery, and by the exposure of well-defined forms to strong lights and deep shades.

The work has been rendered as general in its character as the peculiarly complicated design of its subject would admit. The topics embraced are those that immediately concern us as individuals in our social and domestic relations. The vari-

ous descriptions are sufficiently extended and minute for the complete recognition of the different plants, and for imparting a knowledge of whatever is peculiar or important in their character, habits, culture, or use.

The Glossary appended, the writer believes, will be especially convenient to the general reader; in the compilation of which, he has made too free use of the most valuable writings of others to give credit in every instance.

Plants appear to have been profusely scattered over the earth, as the stars in the firmament, to invite man by the attractions of curiosity and pleasure to their contemplation. They grow under our very feet, and seem to invite and provoke instruction and delight.

The study of Botany, however, may be recommended, independently of all other considerations, as a rich source of innocent pleasure. Some people are ever inquiring "what is the use" of any particular plant, by which they mean, "What food or physic, or what materials for the painter or dyer does it afford?" They look on a beautiful flowery meadow with admiration, only in proportion as it affords numerous drugs or salves. Others consider a botanist with respect only as he may be able to teach them some profitable improvement in tanning or dyeing, by which they may quickly grow rich, and be then perhaps no longer of any use to mankind or to themselves. They would permit their children to study Botany only because it might possibly lead to professorships, or other lucrative preferment.

These views are not blamable, but they are not the sole end of human existence. Is it not desirable to call the soul from the feverish agitation of worldly pursuits, to the contemplation of Divine Wisdom in the beautiful economy of Nature? Is it not a privilege to walk with God in the garden of creation, and hold converse with his providence? If such elevated feelings do not lead to the study of Nature, it cannot far be pursued without exciting them.

Rousseau, a great judge of the human heart and observer of human manners, has remarked, that "when science is transplanted from the mountains and woods into cities and *worldly* society, it loses its genuine charms, and becomes a source of envy, jealousy, and rivalry." This is still more true if it be cultivated as a mere source of emolument. But the man who loves Botany for its own sake knows no such

feelings, nor is he dependent for happiness on situations or scenes that favor their growth. He would find himself neither solitary nor desolate, had he no other companion than a "mountain daisy," that "modest crimson-tipped flower," so sweetly sung by one of Nature's own poets. The humblest weed or moss will ever afford him something to examine or to illustrate, and a great deal to admire. Introduce him to the magnificence of a tropical forest, the enamelled meadows of the Alps, or the wonders of New Holland, and his thoughts will not dwell much upon riches or honors, things that

"Flay round the head, but come not near the heart."

The natural history of animals, in many respects even more interesting than Botany to man as an animated being, is in other points less pleasing to a tender and delicate mind. In Botany all is calm, elegance, and delight. No painful, disgusting, unhealthy experiments or inquiries are to be made. Its pleasures spring up under our feet, and as they are pursued, they reward us with health and serene satisfaction. None but the most foolish or depraved could derive any thing from it but what is beautiful, or pollute its lovely scenery with unimiable or unhallowed images. They who do so, either from corrupt taste or malicious design, can be compared only to the fiend entering into the garden of Eden.

But let us turn from this odious picture to the contemplation of Nature, ever new, ever abundant in inexhaustible variety. The more we study the works of the Creator, the more wisdom, beauty, and harmony are manifest, even to our limited apprehensions, and if we admire we must adore.

"Soft sell your lacings, heels, and Gait, and Bowers,
In winged clouds, to Him whose sun exalts,
Whose breath perfumes you, and whose power puffs!"

If the public shall find no appropriate use for the work now presented,—either as a first book for the professional student,—as a class-book for our seats of learning,—as an important addition to school libraries and parlor tables,—as a companion of the intelligent man of leisure,—or, above all, as a guide to amiable families, as well as individuals, to make prompt use of suitable remedies in sudden attacks of illness,—the writer will be disappointed; but he cheerfully leaves it with a discerning public to shape its destination.

P. P. G.

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GLOSSARY.

A.

Abbreviated Pencil. Shorter than most pencils in proportion to its breadth.

Abbreviations. Although any one may employ such abbreviations as best suit his purpose, by explaining them (insert) yet the following are in such general use that it is convenient to know them.

Ar. Arabic.
B. Bagdad.
B. Bengalee.
B. Botanic, Botanica, Botany.
C. Chinese.
C. Ceylon.
D. Danish.
D.C. De Candolle.
D. Diseases.
D. Dispensary.
D. Dutch.
E. Ecclesiastic.
E. Elements.
E. Encyclopedia.
E. Esquimaux.
F. Family.
F. Flora.
F. French.
G. German.
G. Gleanings.
H. History.
H. Herbal.
H. Hindoostanee.
H. Illustrations.
I. Italian.
J. Japanese.
J. Journal.
L. Lectures.
L. Linnaean.
L. Lindley.

L. London.
L. London.
M. Marine.
M. Medical.
N. Natural.
N.A. North America.
P. Persian.
P. Physician.
P. Plantarum.
P. Polish.
P. Portuguese.
P. Pencil.
R. Russian.
S. Sanscrit.
S. Science.
S. Specimen.
S. Spanish.
S. Swedish.
T. Tamil.
U.S. United States.
V. Vegetable.
W. Wild.
W. Woodville.

Abundant. Belonging to, or situated on, the wilderness; as firs, oaks, &c.

Abundant. Shows departure from the ordinary structure of the family or genus.

Abuse. An imperfect development of any organ.

Abuse Flower. Not arising in perfection; the proof of which is the want of perfect seed.

Accepted Leaf. A plant leaf, which has not an old or terminal leaflet. — *Not* Appearing as if bitten off; as Red-foot Violet.

Adaptation. Drawing from the soil the food and moisture the growth of the plant absolutely requires.

- Abscise.** The absence of the rank or serialness.
- Abrake.** Stemless.
- Accessory.** Additional; annexed and of a different kind, often applied to the border of the spongioid of a lichen.
- Acetate.** The growing of one thing on another.
- Acetabulum.** Lying upon.
- Acute.** Needle-shaped.
- Acute.** A small, dry, hard, cone-shaped prickle, inseparable from the root which it includes.
- Adnate.** Plants with no floral envelopes are called *adnate* or *adnate*.
- Adnate.** Marked with very fine irregular streaks, as if produced by the point of a needle.
- Adnate.** Small, needle-shaped.
- Adnate Leaf.** *Adnate*. One edge sharp and convex, the other thicker and straight, or concave. *Adnate*.
- Acis.** A separate grain or carpel of a collective fruit.
- Adnate.** Plants having no style.
- Adnate.** Plants having a regular stem, growing at the extension of the point only, and without increasing in diameter.
- Adnate.** Armed with prickles.
- Adnate.** A leaf ending with a long tapering point.
- Adnate.** Ending with an acute angle.
- Adnate.** Applied to plants whose stems are united by their filaments, whether in one, two, or more rows.
- Adnate.** Not distant from the ovary.
- Adnate.** Growing to or upon.
- Adnate Leaf.** Presenting its under surface to the sun. One edge presented towards the stem.
- Adnate.** The relative arrangement of the several organs of the flower while yet undeveloped in the bud.
- Adnate.** Having relation, or affinity, to something supposed to be previously known.
- Age of Plants.** Some plants spring up, flower, ripen seed, and die, in a few hours or a day, which are called *ephemeral*. Others live a few months or a summer, which are called *annual*. Others spring up in one summer and ripen and die the next, which are called *biennial*. Others live an indefinite period, either with the whole stem and branches, or only by the roots, which are called *perennial*. The age of trees may be known by counting the concentric rings, or grains.
- Aggreg.** Assembled closely together.
- Aggreg.** Plants of the endogenous structure, with flowers regularly constructed.
- Aggreg.** *Aggreg.* The flying, feathery, or hairy cover of seeds; as the down of dandelion and dandelion.
- Aggreg.** Bearing eggs.
- Air-cells.** Besides the common intercellular passages and the spongioid, there are very remarkable varieties among the tissues of plants, containing air only, and not the proper juice of the plant. Air-cells are very variable in size, figure, and arrangement. The structure of the air-cells and their uses form one of the most beautiful microscopical objects.
- Air.** Wings.
- Air.** The white substance between the integuments and the embryo of plants.
- Air.** The incompletely formed external layers of plants.
- Air.** Linnaeus compared the plants of the orders *Epacridae* and *Lichenes* under this order.
- Air.** When the first organ, as the stamens, leaves, &c., give place to others different from the natural habit of the plant.
- Air.** Emitting the odor of garlic.
- Air.** Debris, which is formed by the process of washing from the place of distribution.
- Air.** Growing most naturally on high mountains.
- Air.** When one organ is arranged alternately respecting another; as the stamens, in the first two classes, mostly alternate with the petals, or divisions of petals.
- Air.** Branches, leaves, flowers, &c. are alternate when, the pieces being in two rows, the inner is covered by the outer in such a way that each of the

- exterior rows overlaps half of two of the interior.
- Alutaceous.** Tan-color. The color of sole-leather.
- Alveolate.** With partitions like a honey-comb.
- Andria Periphery.** The outer rim of a frond, receptacle, &c.
- Amoet.** A spike, whole flower, each covered with a scaly bract, instead of a calyx and ovella, and falling off together, all remaining still connected with the rachis.
- Amplexual.** Embracing the stem.
- Anal.** Situated near the rear, or between it and the tail.
- Anallaxis.** Applied to detritus which has not received its present character from being washed.
- Analogy.** In natural science it is frequently necessary to reason from analogy.
- Analysis.** To analyse a plant botanically is to search out the uses by the number, form, position, &c. of its organs, as they exist in a natural state.
- Anastomosing.** The ending of vessels, interanastomosing.
- Anastomosis.** A meeting of vessels. When veins, tubes, &c. join in one, or towards their extremities.
- Anatropous.** When the limen of the seed does not correspond with the chalum of the ovule, the ovule is anatropous.
- Antipetal.** Two-edged.
- Anterior.** The organs (collectively) situated just within the perianth and around the plait.
- Anterogress.** With both stem and joints.
- Aphyous.** Winking by angular larynges.
- Angiosperms.** A subdivision of the vegetable kingdom.
- Angular.** By means of intersecting grooves, the stem, calyxes, capsules, &c. often have ridges running lengthwise, which give them this appellation; also having several salient angles on the margin, as the leaf of the *Datura stramonium*.
- Anthelmintic.** Expelling or killing worms.
- Animal.** An organized body, endowed
- with vitality and composed of distinct parts, no one of which is complete in itself; but they are raised above other plants or minerals by the power of perception.
- Annual.** Of one year.
- Annual.** Which springs up, perfects fruit, and dies in the same year. The herbage is often annual with a perennial root. But the root is always perennial, unless the other parts are particularly mentioned.
- Annular.** Having a ring around the capsules in ferns; or a fungus with a ringed stripe.
- Anomalous.** Whatever forms an exception to the assumed rules or systems. In the attempts of old botanists at natural arrangement, many plants were necessarily thrown into anomalous groups.
- Anth.** A modification of the lamina, and the filament of the petiole: in the limb of a petal is analogous to the lamina of a leaf, and the vagina is analogous to the petiole of a leaf.
- Anthérifère.** Flowers bearing stamens; that is, anthers without filaments.
- Anthérif.** Having the appearance of an anther.
- Antipet.** Effluence against petrification.
- Apetale.** Apetalous, without petals.
- Apetalum.** A flower without a corolla.
- Apo.** The tip or end. Summit of the spine of a shell.
- Aphyllum.** Leafless.
- Appendage.** As thorns, tooth.
- Appendiculate, Appendiculate, Appendiculate.** Having something attached to a leaf, cord, &c.; as a wing on a petiole, a mystery at the end of a petal, as in some species of *Polygala*, &c.
- Approved.** Proved closely upon something else.
- Appressed.** Growing near each other, or near to a different part.
- Apterus.** Without wings or (margin).
- Aptotic.** Growing in or belonging to the same.
- Arboreal.** Covered with intercrossed hairs, so as to resemble a quill's web.
- Arbores.** Tree-like.

delimited. Belonging to a tree.
divided. Curving above.
divine. Bent like a bow.
divided. Having the surface divided into little squares or areas.
diving. *dryness*.
div. An expansion proceeding from the summit of the funiculus or seed-stalk, either partially or wholly investing the seed.
divine. Tapered, as in the glumes of barley.
div. Space and position.
div. When the veins project far beyond the margin is sharp spine or prickles.
div. The spiny quality of a thing.
divine-form. Shaped like an arrow-head. It differs from heart-form in having the hind lobes acute.
divided. Jointed. Articulated division of animals includes those which have jointed abdomens; as anglicornes, klutens, spiders, and wasps.
divine. A joint, the place where one thing is joined to another.
divine. *Glans*. The different conditions of the stamens.
divine. The different conditions of the styles or stigmas.
div. When the pericarp becomes dilated and hollowed out at the upper end, the lamina being articulated with and closing up the orifice.
divine. Arising obliquely.
divine. Rough.
divine. Arising in an oblique direction.
divine. Tapering, or a fungus, without a stem or cup.
divine. Roundness similar or thin.
divine. Tapering gradually till it becomes slender. Long and slender.
div. Slip-wood, the last year's deposit.
divine. Having ear-shaped lobes at the base.
divine. Linear at end adjoining the base, and becoming sharp and more or less curved to one side at the point.
divine. Acuminate.
div. A short slender process or stiff beard, from the top or back of glumes or chaff.

divine. Having arms, slightly terminated in a hard straight, subulate point; it is always a continuation of the rib, and sometimes separates from the lamina below the apex.
divine. Without arms; sometimes it means a blunt, pointless arm.
divine. Nearly cylindrical towards the base, with one side projecting towards the end; which projection is sharp-edged.
div. The angle between the pericarp and lamina on the upper side.
divine. Growing out of the axils.
div. Of fruit is often called columella; the space where two carpels unite is named the commissure; the axis may be compared to the vertebral column of animals in many cases.
divine. The trunk.
divine. The root.

II.

divine. Pulp, valvate berry.
divine. Scurry-like, covered with pulp.
divine. The upper petal is a papilionaceous flower.
div. A straight process, armed with teeth pointing backwards; if forked at the apex, both divisions of the fork being hooked, it is *glochis*, or hook-tongued.
div. The external covering of the stem.
divine. Producing no ripe seed.
div. A hard, short point, like the beak of a bird.
divine. Terminated by a process, formed like a bird's bill; or terminating gradually in a hard, long, straight point.
divine. Having tufts of long, weak hairs growing from dilated parts of the surface. Perfed hairs. It is applied to the filamentous systems on the petals of lily.
divine. With long rows or hairs.
divine. Distinct of beard.
divine. Swelling out at the base and without a stalk. Properly applied to monopetalous corollas only; but it is frequently extended to bilabiate flowers and some others.
divine. Inflated.

- Berried.** Having a juicy, succulent texture.
- Berry.** A juicy pericarp enclosing seeds without capsules.
- Bicapsular.** Two capsules to one flower.
- Bicapsulate.** With two points.
- Bilobate.** With two lobes.
- Biannual.** Of two years' duration.
- Biflorous.** Bearing twice in a year. Common in hot climates.
- Bifid.** Two-lobed.
- Biflorous.** With two flowers.
- Bilobate.** Two-lobed.
- Bifurcate.** Two-forked.
- Bisexual.** Two-sexed. Having a forked stem with two leaves on each part.
- Bipinnate.** Having two glands.
- Bipinnate.** A pinnate leaf with two pairs of leaves on each part.
- Bisexual.** Compound of two lamellae: It applies to a bifid stigma, split longitudinally.
- Bilobate.** Divided into two lobes.
- Bilobate.** Two-lobed.
- Bisect.** Growing two together.
- Bisectile, or Bisect.** Naturally divided into two parts.
- Bipinnate.** Twice pinnate.
- Bisectile.** Twice pinnate.
- Bisectile.** Having two beaks.
- Bisectile.** With two masses or sacs.
- Bisectile.** Two slender lines running longitudinally.
- Bisectile.** Having two furrows or grooves.
- Bisectile.** Doubly ternate.
- Bisectile.** When a capsule is composed of two pieces of valves; or when the glume calyx of grass, &c. consists of two chaffs or lanks.
- Bisectile.** Two-valved.
- Blossing.** The period time when all parts of the flower are completely developed.
- Blossom.** Colored leaves of a flower, whether calyx, corolla, or both.
- Bloss.** Round, oblate.
- Bloss-form.** Hollowed one side, with a composed longitudinal ridge on the opposite side.
- Belly.** It is the first wheel at the base of a muscular shell, the most swollen part of which is called the belly.
- Bolt.** The naked trunk of a tree.
- Bolt.** Hard and very close is another, but not without difference, the parts run off being brittle; as the stem of a peach.
- Bolt in Lichen.** The edging of their receptacles. It is proper, when of the same substance and color from the time of the receptacle.
- Bolt of Cuvillat, Lemois, Piquet, &c.** The spreading limb.
- Bolt.** Bunched up in the veins; as in some Agaves.
- Botany.** The science which treats of the vegetable kingdom.
- Botanical Names of Plants.** Generic names are chiefly given in honor of botanists, and persons of laborious botanists, in the present day. Hence they are a convenient record of the names of the friends of our chief powers manufacturers and adventurous collectors. Specific names are sometimes given upon the same principle. But they are mostly Latin adjectives, expressive of some striking form or quality of the plant.
- Bottle.** A cluster, like grapes.
- Bottle.** Carved over downwards.
- Bottle-form.** About half of a bottle sphere.
- Bottle.** With opposite spreading branches or arms.
- Bottle.** Having bracts.
- Bottle.** Little bracts.
- Bottle.** Leaf-like appendages, intermediate between leaves and the dorsal organ.
- Bottle.** A division of the main stem or root.
- Bottle.** Divided into branches. Applied to roots, trees, &c.
- Bottle.** Subdivision of a branch; a twig.
- Branch Palmate.** A palmate proceeding from a branch.
- Branch-form.** Nearly proportioned to a bottle in breadth and length.
- Branch-pointed.** Terminating gradually in a very fine, sharp point.
- Branch.** Right lobes.
- Branch.** Set with knotted.
- Branch.** Brown fleshy, dark.
- Branch-shaped.** Leaf-shaped, with an elevated base.

Leaf. The winter residence of leaves and flowers.

Bulb. Bulbous roots. Though we call the turnip, the onion, &c. roots, they are strictly bulbs; or the winter residence of the future plants. Some bulbs are born above ground, as in several species of onion. Leaf-buds have been sometimes confounded with roots by old botanists; a bulb is a leaf-bud; a bulbous root is a contradiction in terms.

Bulbiferous. Producing bulbs above ground.

Bulbifer. Small lateral bulbs shooting from larger ones.

Bulbose, Bulbous. Having bulbs. Growing from bulbs.

Bulbous Root. Fleecy and spherical.

Bulbifer. Small lateral bulbs shooting from larger ones.

Bulbifer. Raised in bunches or clusters, as when the parenchymous substance of a leaf rises up between the veins.

Bistoma. That kind of receptacle of lichens which when magnified resembles a coiled horse-hair. They are sessile, sessile, unexpanding, compact, black, and solid; continued along their whole surface. Types, since they are in concentric, or coiled, plaited, and twisted folds; covered everywhere with the same membrane, containing seeds without cells or cases.

Fibrous. Flax-like, silky, or hair-like fibres, at the hinge of some bivalve shells. It is applied to some Fungi, &c.

C.

Callosa. Any part of a plant which falls off early, compared with other parts of the same plant, than is usual for similar parts in most plants.

Calyx. Turfy, growing in tufts.

Calycis. Of a calyx.

Calyle. The outer calyx-like part of the crown of some seeds.

Calculated. Having bristles resembling an external or additional calyx.

Calyptra (in entomology). Applied to the cover of the thorax of some moths.

Calyp. The axillary envelope, the sep-

of the flower, consisting of a whorl of leaves, with their edges distinct or united.

Canaliculus. Beneath the bark and above the wood is interposed in the spring a narrow, viscid layer, which appears to be exuded both by the bark and wood.

Complanatus. Ell-shaped, having the tube wide and swelling abruptly at the base.

Corymbiform. Denotes that the ovule is curved upon itself.

Canaliculus. Channelled or furrowed.

Canaliculus. When the parenchyma is wholly absent and the veins alone remain, anastomosing and forming a kind of network.

Cannabum. Heavy, approaching to white.

Capillary. Very slender, hair-like.

Capsitate. Growing in a head.

Capsitiform. The fertilizing of pistillate flowers by artificially sprinkling pollen upon them. This is important in raising figs.

Capsule. That kind of pericarp which opens by valves and becomes dry when ripe; not including silicles nor legumes.

Cavata. Cavitate, knot-shaped.

Caryopsis. A small, one-celled, indehiscent pericarp, adhering to the seed which it incloses.

Carnosa. Flesh-colored.

Carnosa. Fleecy.

Carpel. The small part out of which compound fruit is formed.

Carpogonium. A substitute for the word Fructification.

Ceriseiform. Grassy; hard and somewhat flexible. It applies to a leaf when it is bound around with a strong margin, different from the disc of the leaf.

Caryophyllus. The axis of the fruit is the Umbelliferous.

Caryophyllous. Like the Pink.

Caryophyllous. Pink-like, as to the corolla; having five petals with long claws, all regular, and set in a tubular calyx.

Cartilaginous. Callosa skin or cartilaginous scale.

Cautious. Fervent.

- Galea, or Awent.** An assemblage of small flower-bearing stamens, which serves as lateral calyx.
- Gaided.** Pertaining to the tail or posterior extremity.
- Gaidon.** With a tail-like appendage.
- Gaioles.** The main body of the root.
- Gaioucent.** Denoting the presence of the male or sexual stem.
- Gaioune.** Leaves growing from the stem.
- Gaioia.** The main leafage-bearing stem of plants that are annual in duration and destitute of woody stems.
- Gaioucarpon.** Whose stem contains many joints, as trees and shrubs.
- Gai.** The hollow part, or cavity of a pericarp or anther. It is more generally applied to the cavity of pericarp where seeds are lodged. According to the numbers of these, the pericarp is called uncelled, two-celled, &c.
- Gaiou.** Composed of cells.
- Gaiou Tisse.** Composed of separate cells, or vessels adhering together.
- Gaioune.** Flowerless plants.
- Gaiou.** Little cells, or small bladders and cavities of various forms. Sometimes applied to that kind of receptacle of lichens which is globose, terminal, and formed of the substance of the frond, and at length bursts irregularly and exposes uncoated seeds mixed with fibre.
- Gaioune.** Sailing.
- Gai.** This, ineluctable covering of the seeds of grass, grain, &c., or left on the receptacles of some compound flowers after the seeds are removed.
- Gai.** With chaff-like processes.
- Gaiou.** The point of attachment of the stalk to the nucleus of the ovule.
- Gaioued.** Hollowed out longitudinally with a rounded groove of considerable depth.
- Chemical Basis of Vegetable Tissue.** Oxygen, hydrogen, and carbon, with an occasional addition of nitrogen.
- Gaiouphyll.** The mixture globules or grains to which the color of the leaf is due.
- Gaiou.** A close, limpid liquor contained in a seed in the time of flowering. This liquor, after the pollen is received, becomes a perfect embryo of a new plant, and takes the consistence usual in perfect seeds. But without the reception of the pollen, neither anything like the embryo or perfect seed is ever formed.
- Gaioune.** Green coloring matter or particles.
- Gaioune.** The mark or natural bottom whence the leaf has fallen.
- Gaiou.** Blain like those of the eyelash.
- Gaiou.** Edged with parallel hairs or bristles resembling eyelashes.
- Gaioune.** Of the color of wood-ashes.
- Gaioued.** Rolled in spirally, beginning with the tip, which uniformly occupies the center; as hairs.
- Gaioune.** Rolled downwards from the apex.
- Gaioune.** An irregular dehiscence, where the top of the pericarp falls off like a lid.
- Gaioune.** Terminating in a thread or odd leaflet.
- Gaiou.** The base of the leaf being more or less heart-form and sessile, so that the two basal lobes partly surround their stem.
- Gaiou.** The highest division of bodies is a system. Each class is defined to be the agreement of several genera in the parts of fructification, according to the principles of nature, distinguished by art. Great divisions constitute principal classes.
- Gaiou.** Club-shaped.
- Gaiou.** The lower narrow part of a pedicel, by which it is fixed in the calyx or receptacle.
- Gai.** Split down, not exceeding halfway to the base; with nearly straight edges on both sides of the fissure. The parts into which it is split are numbered in description; as once split, making two divisions, it is called 2-lobed; twice split, 3-lobed, &c.
- Gaiou.** That kind of receptacle of lichens which is open, elongated, sessile, Mack, very narrow or linear, with a somewhat spongy disc; the border is parallel on each side and proper. Sometimes it has an accessory border from the crust border. The style is either simple and solitary, or aggregate, confluent, and branched.

Climata. Plants which support themselves on other objects or plants by means of tendrils.

Climbing. Ascending by means of tendrils, as grapes; by leaf-stalks, as Virginia's Bower; by cordlike radicles, or rootlets, as the creeping American ivy.

Cul. The clavate part of a fungus, which supports the fruit or bears the seed.

Culverine. With united bases.

Cuspidate. Existing at the same time. Applied to willows and to some other plants; it implies that the flowers and leaves appear at the same time.

Culm. Thickened, increased, or passed together, as the anthers of potato-flowers.

Cuspidate. Compact. Pressed or squeezed close together.

Cuspid. Consisting of conicatus roots, leaves, or stalks, as the bulbous roots of onions.

Cuspidated. Covered with loose, white, tangled, thin hairs, resembling the web of a spider.

Culm. Resembling the shell of a snail.

Culverine. Connected.

Culm. Twisted like a rope; or rather resembling the form of one thread of a rope, after the other threads are removed.

Color. There are eight principal colors, under which all the colors may be arranged, viz.: white, gray, black, brown, yellow, green, blue, and red.

1. WHITE.

Snow-white. As the purest white.

Pale-white. Very pale, but not so clear as the last.

Ivory-white. White verging to yellow, with a little luster.

Hill-white. Dull white, verging to blue.

Chalk-white. Very dull white; gray.

Silvery. A little changing to bluish-gray.

Whisk. Any kind of white a little soiled.

2. GRAY.

Asp-gray. Color of clean, cold ashes.

Poor-gray. Free gray, a little verging to blue.

Smoky-gray. Gray bordering on blue.

Lead-colored. The same, with a little metallic luster.

Sooty. Gray changing to brown.

Moss-colored. Gray with a touch of red.

Hoary. A grayish whiteness, caused by hairs overlying a green surface.

Rather hoary. A variety of the last.

3. BLACK.

Pure-black is black without the mixture of any other color.

Divided and singular. When a portion only is black.

Black. A little tinged with gray. A variety is signum.

Oil-black. A little verging upon blue.

Dark-black. Black with a strong lustre.

Pink-black. Black changing to brown.

4. BROWN.

Chestnut-brown. A little tinged with red.

Brown. Brown tinged with gray.

Deep-brown. A pure dull brown. Under-brown is nearly the same.

Bright-brown. Clear brown.

Dusty. Light-brown, with a little mixture of red.

Cinnamon. Bright-brown mixed with yellow and red.

Fiddler-brown. Brown mixed with red.

Rufous. Reddish-brown.

Leather-colored. Harsh, or dark blood color.

Fulvous. Dirty brown.

Livid. Black and blue, like a bruised eye; gray shaded with pale-blue. Duntily.

5. YELLOW.

Lemon-colored. The purest yellow.

Gold-yellow. Pure yellow and bright.

Yellow. As gamboge.

Sulphur-colored. A pale, lively yellow.

Stove-colored. Dull yellow mixed with white.

Leather-yellow. Whiskish-yellow.

Olive-color. Yellow changing to brown.

Ochraceous. Yellowish-white.

Waxy-yellow. Yellow with waxy-brown.

Egg-yolk. Dull yellow, just turning to red.

Apricot-color. Yellow and reddish.

Saffron-colored. Orange, with a touch of brown.

Heliotrop. Grayish-yellow with a little brown.

Isabell-yellow. Dull yellow with a mixture of gray and red.

Tomacous. Brownish-yellow, like Englished earthen-ware.

Tawny. Dull yellow, with a mixture of gray and brown.

Crimson. Tawny, a little darkened.

Lead. Black-yellow.

6. GREEN.

Grass-green. Close, lively green without any mixture.

Green. Green, not bright; shades of green.

Verdigris-green. Deep green with a mixture of blue.

Sea-green. Dull green, passing into grayish-blue.

Deep-green. Green, a little verging upon black.

Yellowish-green. Black stained with yellow.

Olive-green. A mixture of green and brown.

7. BLUE.

Prussian-blue. A close, bright blue.

Indigo. The deepest blue.

Blue. Lightish blue.

Sky-blue. A light, pure, lively blue.

Lavender-color. Pale blue, tinged gray.

Violet. Pure blue, stained with red.

Lead. Pale, dull violet.

8. RED.

Carmine. The purest red, without any admixture.

Red. In Greek composition, the common term for any pure red.

Ruby. Pale, pure red.

Flash-colored. Pale, with a slight mixture of gray.

Purple. Dull red with a slight dash of blue.

Sanguine. Dull red passing into brownish-blue.

Phloxineum. Pure, lively red with a mixture of vermilion and scarlet.

Scarlet. Pure carmine slightly tinged with yellow.

Flame-colored. Very lively scarlet; fiery red.

Bright-red. Reddish, with a metallic lustre.

Gamboge. Scarlet, with a slight mixture of orange.

Vermilion. Scarlet, with a decided mixture of yellow.

Dutch-color. Dull red mixed with gray.

Brown-red. Dull red, with a slight mixture of brown.

Arsenopurpureum. Dull red, with a strong mixture of brown.

Coppery. Brownish-red, with a metallic lustre.

Cobaltinum. Greenish-red.

Clayed. Not green.

Crinoid. The central pillar of substance formed by the united placenta.

Column. The consolidated stamens and pistils of *Orchidaceae*.

Columnar. Formed like columns.

Cone. A half of branch on the top of a spike of flowers.

Conchoidal. Same as pinnatifid, but the segments very numerous, close, and narrow, like the teeth of a comb.

Concinne. The inner face of the variegated of *Umbelliferae*.

Concom. A kind of inflorescence, having a stalk of sessile bracts on the top of it.

Complete. Having both calyx and corolla. When the corolla is wanting, the flower is incomplete. When the calyx is wanting, the flower is naked, if it has a corolla.

Complex. Having both calyx and corolla. When the corolla is wanting, the flower is incomplete. When the calyx is wanting, the flower is naked, if it has a corolla.

Compound. Folded together.

Compound Lovers. Consisting of several lobules.

Compound Term. When any part of a plant is to be described which does not agree with the definition of any term in use, two or more terms must be compounded, so as to convey its

mind correct descriptions. For example, the rhomboidal has notches on the margin pointing towards the apex, which answers to the description of serrate leaves, excepting that the notches are hollowed out. But these hollowed notches are not deep enough for sinuatus; therefore the two terms are synonymous, making sinuato-serratus. Compound terms are always united by a hyphen.

Compressed. Flattened in a vertical direction.

Concave. Hollow.

Concentric. Fillets or lines at equal distance from a common centre.

Concord. Hardened or formed into one mass.

Confoliaceous. That kind of foliation when the leaf, while in the bud, has its two sides shut together, like two leaves in a book.

Con. Solid fruit of glass, coral, &c.

Confer. Thick-set; leaves, flowers, &c. standing so closely together as to seem to crowd each other.

Confused. Running into one another.

Conspicuous. Plants of very similar habits, &c.

Conv. With a lateral base and approaching a point towards the apex, as the spot of a comet.

Convexum. Joined in point.

Caucum. Joined together at the base.

Coracum. Usually a more prolongation of the filament terminating, not at the base, but at the summit of the anther.

Convered. Converging.

Conid. Like a cone.

Continuous. Uninterrupted. Continuing through the whole extent.

Contorted. Twisted.

Converging. Approaching, or bending towards each other.

Convex. Rising spherically.

Cruciate. Wholly rolled in another.

Crest Almost meet the flaring parts of vegetation, and clasp themselves in circles.

Crook. The embryo of the next plant in a bud, situated between the cotyledons in dicotyledonous seeds. It consists of the plum and radicle or root, which

show themselves soon after vegetation commences.

Cuslate. Heart-form.

Cuscutaceae. Leafless. Thick and tough.

Cus. The dilated, subterranean base of a stem.

Cusum. If it dilated under ground, without creeping or rooting, but always retaining a round or oval figure, it is called a *cusum*.

Curved. Having angles at corners. Three-curved, four-curved, &c. are often expressed trigonous, &c.

Cusum. Horned.

Cusula. The internal envelope of the flower.

Cusum. A crown, the expanded, cup-like disc of the Narcissus, &c.

Cusum. Wrinkled. Applied also to ridges in some rocks resembling wrinkles.

Cusum. It consists of a number of layers equal to the number of years the tree has been growing; though they are often too thin to be numbered. The innermost layer is called the *live*.

Cusum. Having its origin from the back, or having back. Harder externally than internally.

Cusum. The same as the *cusum*, having the lower pedicels so lengthened as to elevate all the flowers so nearly as quite the same level.

Cusum. Arranged like a *cusum*.

Cusum. Rilled.

Cusum. The bulky, porous, and fatty part of seeds.

Cusum. Plants. Producing seeds composed of determinate parts.

Cusum. Resembling rotate, but with an erect limb.

Cusum. When the edges meet below and expand above, and generally separate, as the spines of the *Artemisia*, or *holcus Terres*.

Cusum. Consisting of slender branches, exceedingly treacherous of life, extending horizontally, and sending out roots and branches.

Cusum. Running along the ground, or along old logs, &c., usually in a horizontal direction, and sending off suckers.

Cusum. Notched on the rim or edge.

Osculate. Notched very small.
Osculent form. Resembling the form of the moon from its change to half-filled.
Oscul. Having an appendage somewhat resembling a cock's comb in form, being an elevated, irregular, or notched ridge, resembling the crest of a helmet.
Oscule. Sieve-like. Numerous perforations.
Ostoid. Margin much expanded and curled by a superabundance of tissue.
Ostra. The calyx, hair, or feathers on the top of some seeds; as the dendelion.
Ostrum. Situated on the top, like a crown.
Ostrum. Cruciform, or resembling the cross.
Ostrum. Consisting of four petals spreading at right angles to each other.
Ostrum. Leafy apparatus, but consisting of small crusty substances lying one upon another. Applied to a brittle, crustaceous thallus.
Ostrum. The process of fertilizing flowers by the application of pollen to stigma, visible or not performed.
Ostrum. Flowering plants.
Ostrum. Belonging to the class Cryptogamia. Applied to plants whose stamens are never manifest under the highest magnifying power.
Ostrum. Hooded, covered.
Ostrum. Resembling growth in malice.
Ostrum. Suitable for kitchen cooking.
Ostrum. The stem of grain and grass when dry, usually called straw.
Ostrum. Having culm, as wheat, Indian corn.
Ostrum. Like the roof of a house.
Ostrum. Effects of improvement of plants in every desirable quality.
Ostrum. Coniferiform. The hook of a bird resembling a plough-conifer.
Ostrum. Wedge-shaped.
Ostrum. The form of the ventral segment of a wedge, yet at right angles with its plane.
Ostrum. Hollow within, resembling a life rag.
Ostrum. Cap. The plect of a finger,

which is open at the top; as those of the genus *Portia*.
Ostrum. Cap-form; slightly concave, with a nearly entire margin, as the cap of a worm.
Ostrum. The cap or involution of the amniotous plant.
Ostrum. When the periphery of a leaf is too large for the disc, it becomes wavy or curled.
Ostrum. Bent towards.
Ostrum. Concave and somewhat flattened.
Ostrum. The bristle of a cuspidate leaf, calyx, &c.
Ostrum. Like the point of a spear. A leaf is cuspidate when suddenly contracted to a point.
Ostrum. Divided by acute incisions; often used in composition, as cut-pinnatifid.
Ostrum. The epidermis or scurf.
Ostrum. Cap-shaped, concave.
Ostrum. Like a cylinder in form.
Ostrum. A cylindrical shaft, of nearly equal diameter throughout its whole extent; as some of grasses.
Ostrum. Flowers united like in their general external appearance.
Ostrum. Arranged like a cyme.

D.

Dendelion. The end broad, waving, and torn. Usually fused.
Dendelion. Covered with an opaque, white powder.
Dendelion. Weak, feeble, lax.
Dendelion. Broken rocks. The broken fragments of coarsely disintegrated rocks.
Dendelion. Tooth order of a chain.
Dendelion. With ten stamens.
Dendelion. Ten-toothed; as of a calyx or pinnate leaf.
Dendelion. Cut into ten parts, as 70-leaf.
Dendelion. Terminating; as in a point, in a cuneate, &c.
Dendelion. Falling off as the flower decays.
Dendelion. Turned towards side side.
Dendelion. Separating the chemical elements of bodies. It differs from disintegration, which includes without decomposition.

Decomposed. Here than once compounded, as hyssopus, &c.

Decussatula. Easily peeled.

Decussately pinnate. When the leaflets distichally insert in such form the base of the leaf is its apex.

Decumbent. Lying down or leaning on the ground.

Decurrent. When the base lobes of the leaf grow to the stem below the point of insertion, so that the leaf seems to run downwards.

Decussately pinnate. When the leaflets of a pinnate leaf run along the petiole with their extended bases.

Decussate. Crossing each other at right angles.

Deflexed. Bent downwards.

Deflexion. The separation of the leaf from the stem.

Defoliation. The shedding of leaves before the proper time, on account of injuries received.

Delancey. The longitudinal furrow which usually opens each roll of the anther.

Delancey. The natural opening of capsules in the proper season.

Deloid. Shaped like the Greek letter Δ.

Dense. Close, compact. A panicle with abundance of flowers, very close.

Dentic. Toothed.

Denticulate. Having very small teeth.

Dentoid. Remotely resembling teeth, or having processes somewhat of that form.

Dentate. A tooth. An indenting also.

Derivative. Plants whose flowers appear before the leaves, consequently have a naked appearance. To make naked.

Depressed. Forced inward, or flattened from above.

Derivation. The entering of a root into the ground. The direction is vertical, as the tree; horizontal, as the mint; oblique, as the branching roots of most trees.

Detritus. That part of the surface of the earth which is neither rock nor recently decomposed animal or vegetable matter. Ground or worn-down rocks in the case of earth.

Diastemum. Swinging from left to right,

that is, with the apparent motion of the sun; as the day-star.

Dioecydia. The Linnean class of plants which have stamens united by filaments in two parcels. In some cases, as lupines, the stamens are in one parcel; but in such cases they must be polyandrous.

Diopsis. A short description, containing only what is essential. Linnaeus made it his rule never to let a specific description exceed twelve Latin words. Willdow says more must be added if necessary. It should extend no farther than to express the difference between them and the other species.

Dioecydia. The Linnean class with two stamens only to each flower.

Dioecydia. With two stamens.

Dioecydia. Having the stamens united in two sets.

Diophrum. Transparent.

Dichotomum. Branching by two equal divisions, forked.

Dichotomum (stamens and petals) in separate flowers.

Dioecydia. Two-grained. Consisting of coloring grains, or cells with one seed in each.

Dioecydia. Plants. Such as blue seeds with two cotyledons.

Dioecydia. Two united.

Dioecydia. The class which has four stamens to the flower, two of which are longer, as catnip.

Dioecydia. Having two long stamens and two short ones in one and the same flower.

Dioecydia. Applied to a monopituitous corolla, whose tube widens slowly gradually, and is divided into irregular or unequal parts. It is also applied to any detached parts of a plant.

Dioecydia. Triclinic form. Anthers are diffracted, when bent outwardly, then forward, or short turn.

Dioecydia. Widespread, summer.

Dioecydia. Spreading. Expanded in an open, loose manner.

Dioecydia. The changes effected by the waves in rendering the scale up fit for the purpose of nutrition.

Dioecydia. Finger-shaped.

- Epitome-petalæ.** When the secondary petals, on the sides of which the leaflets are attached, part from the summit of a common petiole.
- Eggonæ.** The order of any of the classes as far as the Polyanthes, which has two styles (if no style, two axillary stigmas) to each flower.
- Eggonæ.** With two petals.
- Elongata.** Expanded, widened.
- Elon.** Protruded to a color, implies that it is isolated; as *eloni-purpureus*, pale purple.
- Elonæ.** The class whose stamens are in a flower on a plant which never bears pistillate flowers, as the hemp and willow.
- Elonæ.** Bearing staminate flowers on one individual, and pistillate on another.
- Elonæ.** Having two petals.
- Elonæ.** Having two leaves.
- Elonæ.** Bimodal, but so divided that the principal axis is lost trace of in the ramifications; as the head of an oak tree.
- Elon.** The whole surface of a leaf, or of the top of a compound flower, as opposed to its edge or periphery; also, the source of the head in the Compositæ.
- Elon.** In the Compositæ, when the flowers are all tubular in the same head.
- Elonæ.** Cut into two parts.
- Elonæ.** The partitions by which cells of the pith are separated.
- Elonæ of Suck.** Spreading of suck for growth and permeation, a subject highly curious and interesting.
- Elonæ.** A pith is *eloniæ* when it issues open with a spring; as the touch-me-not.
- Elonæ.** Spreading off remotely.
- Elonæ.** Leaves of forest in two opposite rows.
- Elonæ.** Separate; opposed to combine and coalesce.
- Elonæ.** Enduring but a day.
- Elonæ.** Spreading in a straggling manner.
- Elonæ.** Scattered into parts.
- Elonæ.** The Linnæan class having more than ten and less than twenty stamens in the flower. Most botanists have rejected this class, and distributed its genera among other classes and orders.
- Elonæ.** Having twelve stamens.
- Elonæ.** Having twelve leaflets.
- Elonæ.** Long spat. Distance between the ends of the thumb and little finger, being both extended. About nine inches.
- Elonæ.** The outer edges of the corolla fringed by the calyx (on the back).
- Elonæ.** Bearing the fruit on the back; as ferns.
- Elonæ.** Besprinkled with dots.
- Elonæ.** Two in the place where most plants have but one; as the double calyx of the hollyhock.
- Elonæ.** In English it has its common, appropriate meaning; as *double-rose*, when the rosebushes are crossed, &c.
- Elonæ or Dory.** When hairs form a short, soft streamer, which partially covers the corolla.
- Elonæ.** Bearing drupes, or fruit resembling them.
- Elonæ (suck-fruit).** That kind of pith which consists of a thick, fleshy, succulent or cartilaginous mass, including a nut or stone.
- Elonæ.** Membranous tubes, with conical or rounded extremities, their sides being marked with transverse bars, rings, or coils, incapable of being availed without breaking.
- Elonæ.** Fleshy, or resembling larch.
- Elonæ.** Cleft in twelve divisions (12-lobed).
- Elonæ.** Dorsally. This term is often prefixed to verbs, in all which cases it simply means dorsally. As *eloniæ-ventralis*, dorsally-ventral, or bimodal.
- Elonæ.** Signifies that the regions in the name of which they are prefixed are twice or three as numerous as large as those of some other.
- Elonæ.** Brownish, the texture of which is firm and durable.
- Elonæ.** Small, short, dense, as compared with other species of the same genus or family.
- Elonæ.** Applied to plants whose flowers contain two or four stamens.

longer than two lobes is the same flower.

K.

Kerf. This term applies, 1. to the round, extended, or appendaged lobes of a heart-form leaf; 2. to the side lobes near the base of some leaves; and 3. to twisted parts in some ferns and some liverworts, which are supposed to resemble the condyles, or passages into the ear.

Kibotous. Without bracts. (Floral leaves.)

Klerrum. Ivory-white; as the whole plant *Mammecia*, called *Knock-drops*, or *Klerrum*.

Kolourum. Without a spur or horn.

Kolour. Beet with prickles.

Kolour. Nervous or ridges.

Kolourum. The pearly substance on some lichens composed of minute distinct globules.

Kolourum. Flowering season of different sorts of plants. More simple flowers come on in June than in any other month, in North America. Very few compound flowers appear before August.

Kolourum. Unnatural filling of leaves by means of improper culture, worms, &c.

Kolour. Open, or having an opening, so that seeds, liquids, &c. may be poured out.

Kolourum. Grassless. Used in cases where plants are common.

Kolourum. Cellular tissue, vascular tissue, and fibre.

Kolour. Twenty-four inches, as used in fruit and history.

Kolour. Longer than wide; rounded at or near both ends, and nearly equal in breadth towards both base and apex.

Kolour. Oval.

Kolour. Exceeding the common length.

Kolourum. Having a small notch at the end.

Kolour. An organism body, the rudiments of the young plant, situated within the integuments.

Kolour. Suffering.

Kolour. Fragment or shell; the inner coat of the seeds.

Kolourum. Structure. Accretions of the stem being made within the portions already formed.

Kolourum. Plants growing by internal accretions.

Kolourum. The third membrane of plants, corresponding with the pericarp, &c. of the ovule.

Kolourum. Flowering towards.

Kolourum. Inner mouth of perforation.

Kolourum. Having nine stamens to the flower.

Kolourum. Belonging to, or varying into, the class *Kolourum*.

Kolour. Knotless. Having no joints; as the balsam.

Kolour. Having oval form leaves.

Kolourum. Sword-shaped; two-edged.

Kolourum. Inverted in an irregular manner.

Kolour. The margin of the leaf even-edged; continued without interruption.

Kolourum. Of very short duration. Insect or plant of an hour.

Kolourum. The outer integument or skin of the seeds.

Kolourum. The skin; a form of cellular tissue externally enveloping the plant.

Kolourum. Growing upon the summit of the ovaries or germs.

Kolourum. Growing close upon the comb.

Kolourum. A thin membrane stretched over the mouth of the moss.

Kolourum. Inserted upon the leaf.

Kolourum. Plants fixed upon the trunks and branches of other species, and deriving their nourishment chiefly from the air.

Kolour. Similar parts, equal among themselves. The calyx, corolla, &c. are equal when the leaflets, petals, or subdivisions are similar in form, size, and direction. Prefixed to *pinate*, implies the absence of a terminal leaflet.

Kolourum. Overlapping in a parallel manner; without any involution.

Kolour. Upright. Not perfectly straight and ascending as *erectum*. When applied to any thing laterally attached to the stem, as leaves, &c. it implies that it makes a very acute angle with it.

Enamelled. Everted; everted.
Enamelled. Hedgehog-like.
Enam. Galled; unequally stained, as if the leaves had been eaten by insects.
Enant. Entail.
Enant. The stamens and pistils.
Enant. Blanched or whitened.
Enant. Verdant throughout the year.
Enant. Dark places as remain these leaves throughout the year; as white year, hard, etc.
Enant. Parts whose capsules are without rings. This comprises one series of ferns. Those which have an apparent vertice of, but not in reality, a ring, form another section. Those with a ring, another.
Enant. Hollowed. With deep pits.
Enant. That part of the shell which forms a rim and base of the shell.
Enant. The process by which the superabundant water of the sap is given off to the atmosphere.
Enant. Stems. Addition to the diameter of the stem, made externally to the part already formed.
Enant. Plants whose stems increase by external accretions.
Enant. Falling upwards.
Enant. Foreign; not native.
Enant. Capable of being spread.
Enant. Unfolded. Spread out flat.
Enant. Standing out. Stamens are erect when protruded out of the corolla. Proliferous of spikes is caliciform plants are erect, when protruded out of the sheath, as varix filicoides and palmaceae. Teeth may be erect.
Enant. Projecting or extending out of the lower or sheath.
Enant. Dried up.
Enant. Without stipules.
Enant. Outside of the leaf. A stipule is extrastipular when it comes out a little lower than the leaf.
Enant. Outwardly; turned upwards or from its axis.

F.

Facies. The general external appearance of a plant.

Facies. Produced by art; artificial.

Facies Clavata. A rhizome where the number of parts in time when circumstances, not of essential importance, is taken into it. It is already of less as more characteristic marks than are absolutely necessary.

Facies. The nutritious part of wheat and other fruits.

Facies. Kidney-shaped, broad, and curved.

Facies. Spread out and placed in a related manner, like letter 'f'.

Facies. Stuffed, full. It is applied to flowers, hollow.

Facies. Full, used, four, many, plenty.

Facies. Muddy.

Facies. Having pointed heads, or colored stripes. Also used to express the unusual growing together of contiguous parts, as two or three apples growing together.

Facies. A bundle; flowers umbel-like is the general external appearance.

Facies. An unusual bundle of branches.

Facies. Branchlets branched unusually.

Facies. Having a flat or level top.

Facies. Deeply pitted.

Facies. Jaws. The throat, or opening into a corolla. That portion of the corolla begins to separate or expand into lips or mouth is the first.

Facies. The plumose crown of seeds.

Facies. That in which the venation consists of a midrib giving off at intervals lateral veins with branching veins.

Facies. Effusion against fever.

Facies. The art of making fruitful.

Facies. Walked around, as the stamens are by the scales in brook-wood.

Facies. Cryptogamous plants, which have green leaves or fronds, with dorsal fruit; as brakes and polypods.

Facies. Containing iron ore.

Facies. Iron-mineral, rusty.

Facies. Applied in pistil-like flowers.

Facies. The application of the pollen, which is formed in the cells of

- anther, to the stigma; which is essential to the production of perfect seed.
- Ferreted*. Having entangling feathers on the legs.
- Fibre*. Any thread-form part. The small flexible thread-form roots of grasses and many other plants are called fibres.
- Filicle*. The false laminae of the root sent off from the nodules.
- Fibro-vascular tissue*. Spiral vessels accompanied by woody fibre.
- Filices*. Composed of fibres.
- Filicoid-cellular*. Is that in which the sides are composed either of both mesophylls and fibre together, or fibre only.
- Fiddle-form*. Oblong and contracted laterally.
- Figurate*. This term is applied to the mouth of capsule of a moss, when it is set round with mesolemnaceous teeth.
- Filament*. The stem supporting the anther at or near its top, and is analogous to the stem of a leaf or to the claw of a petal.
- Filiform*. Shaped like a thread.
- Fimbriate*. Fringed.
- Fistulose*. Growing naturally in mushroom-like.
- Fingered*. Sometimes applied to single leaves, deeply cleft into narrow segments.
- Fine*. Easily split is the direction of the laminae.
- Fissure*. A cleft or slitted aperture. Applied to rocks, &c.
- Fistular or fistulose*. Tubular.
- Fiduliform*. Fan-shaped.
- Floccid*. Too lit. or limber to support its own weight.
- Flogellous*. Resembling a whip-lash. A variety.
- Flammous*. Flame-colored.
- Flavous*. Yellow, yellowish.
- Fleshy*. Thick and filled with pulp within, as liverwort.
- Floccid*. Easily bent.
- Floures*. Red is an insulating mirror.
- Floting*. Lying or moving on the surface of water, as the Lemna (water float-leaf).
- Floting float*. Peculiar to plants which float loosely upon the surface of the water.
- Flores*. Woolly, or resembling the fluffs shaved from cloth. Woolly floures found mixed with spores.
- Flores*. Belonging to a flowered, containing an axipetio flowered; a least.
- Flores Euclyps or Pseudanth*. One or more circles or whorls of leaves, surrounding the stem.
- Flores*. Little flowers.
- Floures*. Blooming flowers. A leaf is floures when a flower grows out of its disc or margin.
- Flores*. One whose employment is that of creating monsters; that is, double and various-colored corollas; as carnations, double roses, &c.
- Floures*. Consisting of many tubular monopetalous flowers at floures.
- Flores*. The stamens and pistils, with their covering. These two organs, or rather their anthers and stigmas, are essential to all plants. But the calyx, corolla, and even sometimes when present, are parts of the flower.
- Flores, Origin of*. Instead of a leafy branch, the ordinary progeny of a leaf, a flower is the result.
- Flores, Quality of*. The perianth, the stamens, the pistils, and the reproductive.
- Flores, Physiological Structure of*. The floral envelope agrees with or is similar to the leaves, of which they are only modifications.
- Flores, Normal Structure of*. Consists of four concentric whorls of organs, the organs of each whorl being equal in number and alternate in position with those of the other whorls.
- Flores-leaf*. The elements of a leaf bud transformed into the organs of a flower.
- Floures*. Growing naturally in rivets and brooks.
- Flores*. Smiling disagreeably.
- Fold*. Alluded to in several denoting or often combined; as free-fold leaves, growing in fives, &c.
- Floures*. Having the form of leaves.
- Flores*. A bud on a leaf. A bud containing leaves only.
- Flores*. The manner in which unopened leaves are situated within the bud. The modes of foliation are, — 1. Involute. 2. Revolute. 3. Obvolute.

4. *Convolute*. 5. *Indurated*. 6. *Equitant*. 7. *Conduplicum*. 8. *Plaited*. 9. *Reclinate*. 10. *Circinal*.
- Filiform*. Particularly adapted to knowing leaves; leaf-bearing.
- Foliate*. One of a compound leaf.
- Folios*. Leafy, leaf.
- Follicle*. A pericarp with one valve which opens lengthwise on one side only.
- Fountain*. Growing naturally about springs or fountains.
- Foot*. Twelfth portion, or the length of a full man's foot. Also applied to the stems of leaves and flowers.
- Foot-stalk*. The stalk of either flowers or leaves.
- Fovose*. The passage left through the two scales or integuments of the ovule.
- Foraminifera*. Pitted with many small holes or foramina. Divided into two pretty long parts, as pearls, bivalves, &c.
- Forked*. Veins divided and subdivided by forked divisions which do not again unite.
- Fornicate*. docket, vaulted, bent over archwise.
- Fora*. A nestiform cavity for the reception of honey. Honeycomb-like.
- Forilla*. The fine substance contained in the particles of pollen. When the ripe pollen comes in contact with the moist stigma, it explodes and discharges the forilla.
- Fragile*. Breaking easily, and not bending.
- Free*. Disconnected, separated, not attached.
- Free Central Placenta*. When the placenta are found in the common centre, and there are no dissepiments.
- Fringed*. Having a border like a fringe.
- Fruit*. The leaves of the fern, palm, &c.
- Frustrum*. Leafy, frond-like or leaf-like.
- Furcate*. The back part of the base of a leaf's till. Generally bristly.
- Furrow*. Nearly the same as *verruca*, but applied to surfaces in which the downy appendages are more opaque, as if the down were concealed.
- Fuse*. The vazy brought to perfection.
- Fuse*, Growth of. The absorption of sap from the parts below.
- Fuse*, Eruption of. Certain chemical changes effected by the combined action of heat, light, and air.
- Fuse*, Growth of. The process and the seed.
- Fuscescent*. Shaggy.
- Fuscescent*. Applied to palms and such other trees as have a simple stem, and leaves only at top.
- Fuscescent*. Bearing, or bearing fruit.
- Fuscescent*. The temporary part of vegetables, which is destined for the reproduction of the species, terminating the old individual and beginning the new.
- Fuscescent*. Assemblage of capsules on the back of ferns. Also small assemblages of powdery bodies on the fronts of lobes, called *sori*.
- Fuscescent*. The third order of the class *Syngenesia*, which bear compound flowers with perfect florets in the disc and neutral ones in the ray; as the sunflower.
- Fuscescent*. Woody, or becoming woody; as lilac, except bark. Mostly applied to bark, or bark like shrubs, which arise from the root in numbers; not in a single hole like trees of oak or poplar.
- Fuscescent*. Falling off early, before the end of summer.
- Fuscescent*. Having appendages, as tentacles.
- Fuscescent*. These are seven:—1. *Stipule*. 2. *Bent*. 3. *Thorn*. 4. *Petiole*. 5. *Stem*. 6. *Claw*. 7. *Tendrils*.
- Fuscescent*. Sooty; dark, dull color.
- Fuscescent*. When the petals of the corolla are so multiplied as to enclose the stamens; which is effected by the stamens becoming petaloid; as the poppy, rose, &c. This rarely takes place in monocotyledonous vascular.
- Fuscescent*. Yellowish rust color.
- Fuscescent*. However unsightly a common mud-stool, the mould on old scraps of leather, in damp places, or the blight on grain, may appear to the careless observer, they are all beautifully organized and highly interesting.
- Fuscescent*. Fleecy and spongy. This term is sometimes put for *filum*.
- Fuscescent*. Of the substance of the fungi.

Funicle. The stalk by which the ovule is connected to the placenta.

Paucal form. A cordula with a tubular base, and a becker opening gradually into the form of a restricted mass.

l'arc-en-ciel, l'écueil.

Performance. Head-like.

Parasitoid. Marked lengthwise with a channel.

Flowers.—Blossoms yellow; disk yellow.

Flowers: Spindle-shaped; a thick, fleshy calyx, twisting downwards.

9

Galen. The arched upper lip of a labiate
flower.

Gabriele: Reinschulding is belovst, ge lovd
kennet Se.

Gap: The opening between two lips of a labiate, or irregular corolla.

Gelatinous.—Having the texture and appearance of jelly.

Günther, Doublet

Geminum. It is also used for paired, in pairs or twins.

Germination. Budding. The germination of plants comprehends the development of a new plant from the seed, as well as the fission.

Geminiperys. Producing buds in the
axils of leaves.

General. General is applied to a whole which is made up of a number of entire individuals. The model of a garden carrot is a *general unit*; and each unitlet terminating a secondary branch is a *special unit*.

Generic Character: The definition of a genus. It is confined entirely to the flower and fruit. It is *Essential*, *Particular*, or *Natural*.

Generic Name. The name of a genus. Miss Crumpton teaches twenty-one rules respecting the naming of genera, which, with his examples, occupy forty pages.

Geniolele. Knood. Forming a very obtuse angle, like a moderate bending of the knee.

1. Palms. 2. Grasses. 3. Lilies. 4. Herbs. 5. Trees. 6. Ferns. 7. Mosses. 8. Algae. 9. Fungi.

Cons. A number of plants which agree with one another in the structure of the flower and fruit.

Ques. The old name of the quarry.

Germination. The first stages of root action in the seed.

Colony. Seeded out: 17/10/1961

Color. 1cm gray, and black color.

Gleditsia. Bilt. Without hairs, or with
scarcely.

Glabrous. Smooth; without scales or
bubbles.

Glands. Minute bodies of cellular tissue, situated in various parts of the plant.

Gladiolus: A sword-form lily is sometimes called gladiolus. It is spelled so lower also.

Gundlachia. Having glands.

Glandular Filices or Ferns: Little glandular points arranged along the veins of the woody stems.

Glaucous. Sea-green; pale flesh-green with a powder of blue.

Global: Kernel et al.

Globula. Minute spheres. Their kind of receptacle of lichens which is globose, solid, and crustaceous, formed of the substance of the trunk, and terminating its points or branches; from whence they fall off entire, leaving a pit or cavity. They are supposed to be covered all over with a colored, leathery membrane.

Goats. Mottled heads.

Globose: When many brachidia are terminated by little heads. A spike is globose when it consists of a collection of subequal heads.

Glossula. The small beads constituting a small globe, or bead.

Geology. The explanation and application of horizontal areas.

Glossary. Clones founded upon the presence and absence of glosses or links.

Glasswort. Glass-like, or bearing glassy, shaly, looks.

Globe. The image situated at the base of a spalled off corner.

Glucose. Flaring changes.

Glabrous. Having on some part more or less of adhesive scales.

Globular-shaped. Canine, hemispherical, & little contracted at the base.

- Gonophore.** A knob. It is applied to a seed, hard body, which falls off upon the death of the mother plant or animal, and becomes a new one; as in the ferns and some radiated animals. Large granulated sporules are contained in the centre of some.
- Gonophore.** Angle fruit fern, one of the new orders of ferns. The receptacles of the fruit are polygonal; as of the genus *Equisetum*.
- Gramina.** The family of grasses.
- Graminifolia.** Having leaves resembling those of grasses.
- Grassiflora.** Having large flowers.
- Grassiflor.** Bearing grains or kernels; as those on the valves of duck-liverwort.
- Grasslike.** Formed of or covered with grass.
- Grasslike.** In the form of grain. A grasslike root consists of several little knobs strung together along the side of a fibrous radicle. It differs from the knotted tuberos root in this; that the latter are strung together by rootlets, which proceed from near the middle of one knob to another.
- Grasslike.** Grass-like substance.
- Grasslike.** Having a strong odor or smell.
- Grassy.** Having a surface which, though not actually grassy, feels so.
- Gregarious.** Herding together.
- Ground.** Furrowed or channelled.
- Groups.** Orders are assimilated on natural principles into groups, affines, &c.
- Ground.** In the form of little clustered grains.
- Guttiform.** Guttiform.
- Gynocarp.** From. Such as bear seeds in a naked ovary.
- Gynogerminal.** With seeds naked, or growing without pericarp.
- Gynostem.** Having the stamens and styles combined in one body.
- Gynostem.** The parts destined to bear the seed and occupy the centre of the flower.
- Hairs.** Minute expansions of the epidermis.
- Hairy.** Globular or slender stems under the wings of some two-winged insects, called psyllids.
- Half.** One-sided, as if one half had been taken off; as the halved spaths of some Indian Taraps, one-sided in valves, &c.
- Hood.** A hook, as the hooked spines on haddock.
- Hollow.** Hollow-shaped; hollowed out at the base and sides.
- Hood.** Similar to an unhooked, but the flowers are sessile or nearly so upon the summit of the peduncle.
- Hood.** Compact, but hardly as close as down.
- Heart-shaped.** The dead and fully-formed central layers are called the heart-shaped.
- Hood or Glove.** Upper lip of a bilabiate corolla.
- Hooded.** Pale red. Peach-blossom.
- Hypocotyl.** The third order of the class Cryptogamia. It includes the hepatic mosses, as denominated by Schrebler, that is, those which have the frondification spread crassily, and have succulent leaves; the duck-liverwort is an example.
- Hypocotyl.** Screen styled.
- Hypocotyl.** Having seven segments to the flower. A small class; the duck-liverwort is our best example.
- Hypocotyl.** Belonging to, or varying into, the class Hypocotyl.
- Hood.** A plant without a woody stem.
- Hypocotyl.** Not woody. Also applied to plants perishing to the root.
- Hypocotyl.** All that part of vegetables which is bounded by the root below, and by the frondification above.
- Hypocotyl.** A collection of dried plants, herbarium.
- Hypocotyl.** Flowers not all perfect, some being staminal or pistillate.
- Hypocotyl.** The sixth order of any of the first classes, as her as Polyandria. Six styles or stigmas to each flower.
- Hypocotyl.** The sixth class; six stamens to each flower.
- Hypocotyl.** Having six stamens.

Habit. The general aspect or external features of a plant, by which it is known at sight.

Haustorium. A one-petalled corolla so deeply divided as to appear six-petalled.

Hilum. The scar or mark left on the coats of the seed by its separation from the stalk.

Homotous. Whence all the veins proceed and are parallel and undivided.

Horny. Dough-faired.

Horny. Curved with short, stiff hairs. Nearly the same as *hirsute*.

Hyalid. Dough, with stiff hairs.

Hyaline. Cracked open; a gaping skin.

Hairy. White, with very short, dense hairs.

Hibernica. Suitable for a pot-herb, as dock and borage.

Hilum. That kind of areopole of *Indica*, which is spherical, nearly closed, lodged in the substance of the food, lined with its proper coat, under which are cells 2 or 4-sided. Each hilum finally opens by an orifice in the surface of the food above.

Homogenous. Flowers all regular, similar and perfect.

Homogenous. Having a uniform nature or composition.

Heteropetal. Having the sides divergent in the body in which it belongs, but not being straight.

Heteropetal. Excavated in the manner of a socket of homogenous.

Hooded. Curved or hollowed at the end into the form of a hood.

Hooded. Curved suddenly back at the point.

Hirsutoid. Parallel to the horizon. Leaves are horizontal when they form right angles with erect stems.

Horn-like. Shaped like a horn, or rather like a cock's spur.

Hot Springs. Not always fatal to vegetation.

Hovidae. Moist, humid.

Hyaline. Spread over the ground.

Hyaline. Low, insubstantial.

Husk. The larger kind of glume; as the husk of Indian corn.

Hyaline. Crystalline, transparent.

Hyaline. Growing in the winter season.

Hybrid. Partaking of the nature of two species.

Hyalopside. Water-born. A new order of ferns.

Hyaline. Growing in the winter season.

Hyaline. As exposed or naked, dilated, appressed membrane of gymnosperm fungi, in which the seeds are imbedded; the part in which the sporules immediately lie.

Hyalopside. Flowers containing more than ten stamens.

Hyaline. The filaments, fleshy, warty, inflated, or bladders.

Hyalopside. Salver-form, the tube ending abruptly in a border spreading horizontally.

Hyalopside. Flowers containing fewer than ten stamens.

Hyalopside. A raised rim, either entire or variously lobed, surrounding the base of the ovary.

Hyalopside. When the leaves appear after the flower, as some willows, grasses, &c.

I.

Lower Filament. Figure or drawings of plants.

Imbricate. More than ten stamens. The calyx is always monophyllous, and the claws of the petals fixed into the side of it along within the stamens. Calyptrae is a name embracing plants of this class.

Imbricate. Belonging to, or relating into the class Imbricate.

Imbricate. *Imbricate*. The change of color of leaves in autumn to yellow, reddish, &c., as maple.

Imbricate. *Imbricate*.

Imbricate. Placed over one another, like shingles upon a roof.

Imbricate. Having no border or peculiar margin.

Imbricate. Unequally pinnate. When a pinnate leaf is terminated by a single or odd leaflet.

Imbricate. Wanting the stamens or pistil. No flower is perfect without both organs; but with an another and stigma the flower is perfect, though destitute of calyx and corolla.

Imbricate. Valves of capsule or glume unequal.

Linear. Having a spiny path.

Imperforate. Hollow, but without any opening.

Imbricate. Whisk.

Immaculate. Flesh-colored.

Incised. The margin divided by deep incisions.

Inclined. Bent towards each other. Also bent towards something different.

Including. One thing containing another within it; as the calyx shutting up the seed, capsule, or ovule.

Incluse. Inclosing. Opposed to exert. Stamens not projecting.

Inconspicuous. Not apparent without the aid of a magnifying.

Increase. Thickening. When a flower-stem grows thicker upwards towards the flower.

Increased. Becoming thicker by degrees.

Increment. The quantity of increase for a given time.

Incombent. Lying against or across. In the *Camphora* it denotes that the radicle is applied to the bank of one of the cotyledons.

Incurved. Bent towards. At a leaf bent in at the point towards the stem, a filament towards the point, a pedicel towards the stem.

Incluse. The pericarp at maturity remaining permanently closed.

Indigenous. Native of.

Indivisible. Undivided. Not cleft into parts. It may, however, be serrate, ciliate, or toothed; it is therefore not the same as entire.

Induplicate. Conduplicate; a leaf is the leaf, having two sides that like the leaves of a book.

Indurated. Becoming hard, tough, or leathery.

Indurium. The membrane that incloses the thorns of ferns.

Inermis. Having no thorns, prickles, &c.

Inflow. Downwards. Towards or near the base or root.

Infruse. Below; a calyx or corolla is infruse when it comes out below the germ.

Infruse. At the very bottom or base; lowest.

Inflated. Tumed and hollow; blown up like a bladder.

Inflated. Bending inward.

Infruse. The arrangement of the flowers upon a stem or branch.

Infruse, *Centrifugal*. The blossoming of the flowers commencing with those of the circumference and proceeding towards the centre.

Infruse, *Centrifugal*. The blossoming of the flower, commencing with the central flower and proceeding toward those of the circumference.

Infruse. Bent in such a way as to appear as if broken.

Infruse, *Centrifugal*. *Insetiform*; *insetiform* at the base, then gradually enlarging towards the border.

Infruse. Stained. Applied to stigmata when the color appears as if painted or artificially.

Infruse. Attached to the filament by the base of the connective.

Infruse. Having no smell.

Infruse into. Growing out of.

Infruse. Marked with.

Infruse. Furnished with.

Infruse. Very entire, having no dentation whatever.

Infruse. Curving of the seed immovably extends to all its other parts.

Infruse Passage. The space between the cells of the tissue.

Infruse. Situated along the stem between the origin of the leaves, and opposite to them.

Infruse. Between two extremes, or nearly so.

Infruse. The space between joints or limbs.

Infruse. When segments of a different kind or different size are intermixed or interposed among a series. A spike is interrupted, when leaves or smaller flowers are interposed at intervals.

Infruse *Passage*. When smaller leaflets are interposed among the larger; as the potato and agave leaves.

Infruse. Twisting, turning, or bending towards, from a straight, upright position.

Infruse. Within the leaf. A stipule is intrafilamentous when it originates a little above the origin of the petiole, which brings it, as it were, within the bosom of the leaf.

Involuted. Not originally native. Brought from some other country.

Inwards. Inwards; turned inwards.

Inverted. Having a part of an organ in an opposite direction to that of other analogous parts.

Involucel. A partial involucre.

Involucel. A leaf-like calyx, coming out some distance below the flower, and never embracing it closely.

Involuted. Having involucre.

Inwards. Having the edges rolled inwards.

Joints. Swelling knees, naps, or narrowed incisions, at regular intervals, along calyx, pods, spines, leaves, &c.

Iridescent. Reflecting light somewhat like a rainbow.

Irregular. Unequal in size or figure.

Involatility. The power of being evolved so as to produce a contractile motion.

Lil. A terminal diminutive, as roundish, somewhat round.

Lilium. Long narrow joints in legumes or liliaceae.

Yoke. In pairs.

Lilium. A cylindrical (or semi-cylindrical) centipede. A cylindrical anther.

K

Kid. The lower petal of a papilionaceous corolla.

Kid. Having a ridge resembling the keel of a boat or ship. A leaf, capsule, calyx, &c. is keeled when it has the midrib, angle, or peculiar process running along the back, of a compressed form and attached by one edge.

Kidney-shaped. Reniform.

Kidney. In thick lumps; as potatoes.

Kid. That kind of receptacle of lichens, which is convex, more or less globular, covered externally with a colored, web-bearing crust, and placed generally at the extremities of stalks, originating from the base, permanent; rarely sessile. Sometimes they are at first sessile on filamentous stalks, and afterwards become convex, imbricate. They are simple, compound, or conglomerate.

Knot. A swelling joint.

Knot. Having swelling joints.

L

Lilium. Lip; the suctory of the Linnaean school.

Lilium. Having lips; the calyx or corolla divided at the top into two general parts.

Lilium. Winding and turning by various involutions and contortions, like a labyrinth.

Lilium. Torn. Cut, or apparently torn, into irregular segments.

Lilium. The divisions of a calyx, ovella, leaf, &c., into which they are cleft, torn, or divided.

Lilium. Gashed; the series and series all separate.

Lilium. Mithras. The silky joint of some plants; as the willow. It is also called by this name when the juice is red; as in the bloodroot.

Lilium. Milky or juicy.

Lilium. Milk-white.

Lilium. Small hollows or pits on the upper surface of the dialle.

Lilium. Pined. Hollow between the veins of a leaf, when the blisters are on the under side of the leaf instead of the upper. Also applied to pits.

Lilium. Growing most naturally in or about lakes.

Lilium. Smooth, even, polished; not striate, or wrinkled.

Lilium. A thin plate. Applied to the gills or vertical plates under the hat or pileus of the Agaric fungus, or tooth-stick — *Lilium*. When all the gills reach from the stem to the margin of the hat — *Lilium* or *Lilium*. When some reach but part of the way — *Lilium*. When a long and short gill alternate — *Lilium*. When one long and two short gills alternate in pairs — *Lilium*. When several gills unite in one, so as to appear branched — *Lilium*. When they run down the stem more or less — *Lilium*. When so narrow as to have the appearance of veins.

Lilium. Applied to the two terminal plates of the antennae of some insects; also to somewhat similar plates constituting the stigma at the end of

- leafy styles*, as the *Convolvulus*, *land-wort*.
- Lamellæ*. In the form of thin plates, or having thin plates.
- Lamina*. The expanded upper part of the petal supported by the claw.
- Laminate*. Consisting of several thin, flat portions.
- Lanate*. Woolly. Covered with curly, crinkled hairs, thick pubescence. Not so fine nor so closely matted together as *lanuginous*.
- Lanceolate*. Lance-shaped; narrow and tapering at each end.
- Lancea*. Down, or wool.
- Lappaceous*. Flap-like; rennet-like and prickly, as *burdock*.
- Lateral*. Relating to the side.
- Lateralibus*. Side-leaved; inclining to one side.
- Lateralis*. Brick-colored; reddish.
- Latic*. The means to elaborate and convey the nutritious sap.
- Laticiferous Tissue*. Branched anastomosing tubes lying chiefly in the back and the under side of leaves.
- Latifolius*. Broad-leaved.
- Laticus*. Resembling net-work.
- Lax*. Linger, loose, open, weakly flexible.
- Leaf*. That part of most vegetables which presents more surface to the atmosphere than all other parts, and consists principally of the cellular integument, covered with the cuticle. They are evergreen, remaining through the winter, or deciduous, falling off at the close of the year. They are further distinguished by their form, surface, and position.
- Leaf-leaf*. The rudiments of young branches; they consist of scales imbricated or otherwise disposed over each other, surrounding a minute axis. A bulb is a leaf-leaf of the root.
- Leaf, Color of*. Almost universally green.
- Leaf, Constituents of*. A foot-stalk, composing a framework of veins, a fleshy substance filling up the interstices, and a cuticle covering the whole.
- Leaf, Form of*. Depends upon the direction of the veins and the vigor of their action.
- Leaf, Duration of*. Temporary appearance.
- Leaf, Functions of*. Exhalation, absorption, respiration, and digestion.
- Leaf, Margin of*. Modified chiefly by the more veins which affect the form.
- Leaf, Surface of*. Depends upon the mode of veining.
- Leafing Season*. That time is the year when most leaves come out. In North America, the proper leafing season is in April.
- Leaflets*. Divisions of a compound leaf.
- Leaflets*. Domains of leaves, naturally. This term does not apply in cases of defoliation, in that season.
- Leaflike*. Imitating the texture and form of a leaf.
- Leaves, Arrangement of*. Nearly or quite circular, and modified in various ways.
- Lepous*. A pod, consisting of two valves without dissepiments.
- Lepaceous*. Having legumes.
- Lenticular*. Lens-shaped.
- Leyous*. Covered with pubescence or sub-pubescent scales, mostly white or whitish. Patches of lichens often give woody plants a lepous appearance.
- Lign*. The innermost layer of the bark, or the last year's deposit.
- Lignous*. Firm; not albumen, or attached.
- Lichen*. The fifth order of the class *Cryptogamia*. It includes the greenish, brown, yellow, red, gray, &c.; patches on old stumps, mosses, trees, &c.; also some gray, fleshy, succulent bodies.
- Light*. Various motions and inclinations of plants prove the effect of light upon them. Trees present their leaves outward in quest of light, because it is darkest in the centre. Plants in a green-house all present the upper surface of their leaves towards the enlightened side of it. Most compound leaves follow the sun through the day. Plants deprived of the light lose their green hue; as *potamo-caps*, growing in a dark cellar.
- Lignous*. Woody.
- Lignis, or Lignis*. The membrane at the top of the sheath of grasses, &c.
- Lignis*. Strap-shaped.
- Lignis*. Like the lip.

Limb. The broad, spreading part of the petal of a monopetalous corolla.
Limb. The breadth of the crescent at the root of the finger-nail. Twelfth part of an inch.
Linear. When the veins (or nerves) are straight.
Linear. Marked with lines. Striated.
Lingiform. Tongue-like. Thick, fleshy, linear, blunt at the end.
Linnean classes. The five different conditions of the stamens upon which the twenty-four artificial classes of Linnaeus are founded.
Linnean orders. The number of distinct styles (or stigmas) constitutes the basis of the artificial orders of Linnaeus.
Limnæa. Growing on the sea-coast; also on the shores of rivers.
Livid. Livid. Dull gray, inclining to violet, like leaded eyes.
Lobe. Divisions which are rounded, or parted by rounded, or curved incisions. Sometimes it seems to be applied to cases where it has nothing to distinguish it from a segment cut off by a sleek incision, except by its being larger.
Lobed. Divided into lobes. Deeply parted, with the segments distant, or spreading and large.
Locomotorious. Capable of moving.
Locustoid. When the natural opening takes place by the dorsal suture of each cupel directly into the cell.
Locula. The little cell of an anther which contains pollen is used by Ach.-like to express a filamentous, bearded style.
Loment. A legume pod with transverse partitions. This term is generally applied to the legumes in the natural order Leguminosæ.
Longifolius. Long-leaved.
Longissimus. Very long.
Longus. Rather long.
Lonic. Open; not compact. Of a soft, cellular texture, as pith.
Lonic. The long threads of Urtica. This taken, so common on trees, is erroneously called moss by most people.
Lonic. Plants not particularly small, but much smaller than kindred species.

Lucidus. Bright, shining. Nearly the same as *velut*.
Lunatus. Crescent-shaped.
Lunatus. Shaped like a crescent; new moon.
Lusid. Of a polish, dull, dusky color. Most plants with lurid points are more or less poisonous; as tobacco, henbane, thornapple.
Lutescent. Approaching to a yellow color.
Luteus. Yellow. Being sometimes yellowish.
Luxuriant. Overgrowth.
Lyce. Lyre-shaped.
Lyce-pinnate. Pinnate with the odd terminal leaflet largest.

M

Maculatus. Spotted, dotted, punctured.
Maled. Covered with a hard substance resembling armor.
Male. Staminate, as used by some.
Mammæ. When hairs are interwoven into a mass that can be easily separated from the surface. Maf-like.
Marg. Whenever there are more than are usually numbered of that kind; as we say one-toothed, two-toothed, three-toothed, four-toothed, many-toothed.
Marginal. Withering to the plant.
Margis. The circumference or edge.
Marginal. On the margin.
Marginal. Having a margin differing in some measure from the disc.
Martianus. Growing naturally near the sea-board. It may be extended several miles from the water.
Martianus. Staminate, as used by some.
Martian. Felt-grown, but not entered upon a state of decay.
Marty. Covered with a sort of white, scurfy substance, having the texture of linc in mass; as the alburnum of wheat.
Martian. Proportion between parts is better than any measure. But when measures are adopted, they should be taken from parts of the hand and arm, because the parts of plants vary about as much as the hand, and in adopting these measures, the same allowance should be made.
Martian. Plants possessing principles

- selfeasily active to entice them to a place in the *Mature Motion*.
- Midrib*. In or near the middle. *Midribbing*.
- Midrib*. Pith.
- Midribbing Rays*. Radiating plates, extending from the centre of the truss to the periphery.
- Midribby Stalk*. Surrounds the pith.
- Milkyway*. Profusing or containing honey.
- Milky*. Honey-dew on leaves; particularly without leaves.
- Membranaceous* or *Membranous*. With the texture of membrane.
- Membrane and Fibre combined*. Fibres twisted spirally, adhering to a spireroidal or angular membrane, and often anastomosing irregularly, without the spines touching each other. Membranous cellular tissue is that in which the sides consist of membrane only, without any trace of fibre; it is the most common, and was, till lately, supposed to be the only kind that exists. This sort of tissue, membranous, is to be considered the basis of vegetable structure, and the only form indispensable to a plant.
- Meringue*. Half fruit.
- Mesopore*. The second covering of the seed immediately exterior to all its other parts.
- Metastel*. A mode of arranging plants in classes, orders, &c. Tournefort's *Metastel* divides plants into *herba* and *arbores*. The herbaceous plants are divided into *arborescentes* classes. Fourteen of these are distinguished by the form of the corolla; as, 1. *Infundibuliform*, 2. *Funnel*, &c. The other three classes are *apetalae*, and distinguished by having *stamens*, but no *apparent flowers* are apparent and. The two last are divided into five classes.
- Milch*. The principal prolongation of the petiole, running from the stem to the apex.
- Millet*. Is the form of millet-seed. *Millet spherules*.
- Mixed*. An ambiguous mass of matter, that is without distinction of parts or organs.
- Misch*. Scarlet; vermillion-color. Sometimes red.
- Mistivene*. Extremely small or minute; unusually small.
- Mistivene*. Terminating in two divisions, in some measure resembling a bishop's mitre.
- Mistivene*. The class having stamens united by their filaments in one set; as *hollyhock*.
- Mistivene*. Stamens all united.
- Mistivene*. The class which has but one stamen in a flower.
- Mistivene*. With one stamen.
- Mistivene*. Glabrous joints of anastomosis.
- Mistivene*. Drying fruit but once, and dying after fructification; as wheat.
- Mistivene*. Plants whose seeds have but one cotyledon, or if two, then the cotyledons alternate with each other.
- Mistivene*. The class which produces stamens and pistils in different flowers on the same plant; as Indian corn.
- Mistivene*. Stamens and pistils apart, in separate flowers on the same plant.
- Mistivene*. One style or stigma.
- Mistivene*. Flowers with united petals.
- Mistivene*. The whole corolla in one piece.
- Mistivene*. When the sepals are united, or only one division of the calyx.
- Mistivene*. One-leafed. A calyx all in one piece. All the *calyxes* in the class *fundamental* are of this kind. They are often so deeply divided that a student may mistake them for polyphyllous without particular attention.
- Mistivene*. One-winged. Applies to *fruits*.
- Mistivene*. Including but one nut or stone; as the *peach*.
- Mistivene*. One seed to a flower; as wheat.
- Mistivene*. Single spined.
- Mistivene*. Plants producing any part different from the same part when growing wild. As the rose has but five petals in a wild state; but, by rich cultivation in gardens, the stamens are mostly changed to petals. Carnations and pomeis are examples also.
- Mistivene*. Growing most naturally on mountains.

- Mucida*. Resembling mudiness, or mucor.
- Mucosa*. Covered with a slimy secretion; or with a coat that is readily soluble in water, and becomes slimy.
- Muricate*. Alightly serrated.
- Multicaulata*. Many-stemmed. Having several caudexes or ridges.
- Multicapitata*. Many-capituled. Several capitules to each flower.
- Multicella*. Producing many stems; as the lily.
- Multifid*. Many-lobed.
- Multis*. Many, in composition; as, *Multilobus*, many-lobed; *Multiflorus*, many-flowered; *Multicellus*, many-celled; *Multicellularis*, many-celled; *Multijartus*, many-jointed.
- Mutiple*. Multifid. Having petals lying one over each other in two rows.
- Multijest*. Double-flowered.
- Musum*. Leaves drooping down and hanging over the stem, &c. at sight.
- Musca*. Walled about.
- Muscula*. With hard, short points.
- Musculiformis*. Formed like a break or fly-dap, with hairs at one end.
- Musci*. Mosses. The second order of the class *Cryptogamia*. All mosses have lids on the capsule.
- Musculum-lanceol*. Cylindrical stem, having a rounded, convex, overlapping extremity.
- Musculum*. Not producing parts with their full, complete form.
- Myria*. The rudiments of fungi, or the matter from which fungi are produced.

N

- Nail*. Half an inch, or the length of the nail of the little finger.
- Naked*. Wanting a covering analogous to that of most plants. An stem without leaves, branches without pubescence, vessels without a calyx, root without a pericarp, receptacle without chaff, pubescence, &c.
- Naked Order or Rank*. Without the tegument.
- Nanus*. Dwarfish, very small.
- Nix*. Downy, or like fur on a hat.
- Nupifera*. Tarsip-shaped; very obtuse spheroid.
- Nascent*. Producing sleep or torpor.
- Natant*. Floating. When the plant is fixed by the root at the bottom, and its leaves float on the top of the water, as the pond-lily (*Symplocar*).
- Natural History*. That department of science which treats of the productions of nature as they come from the hand of the Creator, without any decomposition or chemical changes.
- Natural Order*. An arrangement of plants according to their natural affinities.
- Natural System*. The arrangement of plants which have the greatest general resemblance to each other, not only in aspect and structure, but also in properties.
- Nectararia*. The fourth order of class *Symptosis*, which has the disc forms all staminate and the ray flowers pistillate.
- Nech*. The upper part of the tube of a corolla. Also the point or small space from which the two of a plant pascoids downward and the stem upward; it is generally just at the surface of the earth.
- Nectare-flow*. Cylindrical or torus, and contracted at regular intervals, resembling beads.
- Nectarifera*. Producing honey.
- Nectary*. An apparatus for the secretion of honey.
- Nectro-fere*. Linear, right tapering into a fine point from a narrow base.
- Nervous*. Growing naturally in grooves, where the underbark is cloved away.
- Nerve*. Multicellular fibres running from the base to the apex.
- Nervous*. Nerved. Leaves are nerved, when they have rib-like fibres running from the base towards the apex. In resembling nerves for a specific character, the suberb is covered with the lateral nerves.
- Nervul*. Covered with reticulated lines which project a little.
- Ne-nervul*. Having veins crossing each other like network.
- Nervul*. Having neither stamens nor pistils, consequently barren; as the ray flowers of the pansy.
- Nidifera*. Nesting. When seeds are placed in cotton, as in a nest.

Nigrum. Blackish, sooty.
Nymphaea. Dark blue.
Nutrient. That principle of vital energy which tends to remove loss or injured parts.
Nidus. Glozy, glistening.
Nivum. Snow-white.
Nodding. In a drooping position.
Nub. The point in the stem where the leaf with its axillary bud is produced.
Normal. Regular; according to rule.
Normal structure of Plants. Complete and regular organs arranged in consecutive order.
Nidus. Gray and white; cloudy. Resembling cumulus clouds, or heaped.
Numbness. Elongated circles.
Nutrient. Resembling a nut.
Nutlet. The central pulpy mass; the inner seed or kernel.
Nutlet. One of the apothecia of *Clusia*, sessile, oval, solitary, spirally striated, with a membranous covering, and the summit indistinctly split into five segments, containing spicules.
Nutrient. Nutlet-like, nutlet.
Nut. A hard, dry, indurated shell.
Nutlet. Nothing. When above half of whatever it is applied to droops or hangs down.
Nutlet. The various inclinations of the parts, arising from the effect of the sun's rays.

O

O. In composition implies insertion, as obovate, laterally ovate.
Obovate. Convex with the point or apex downwards.
Obovate. Heart-shaped, with the apex next to the stem, or place of insertion.
Obovate. Lanceolate, with the base the narrowest.
Oblong. A position between horizontal and vertical; or between perpendicular and the plane of the base. It is also applied to leaves, petals, calyxes, &c., which are, as it were, cut obliquely, or whose bases are shorter on one side than on the other.
Oblong. Narrow-oval.

Oblong. Somewhat oblong.
Obovate. If it differs at all from obovate, it must be more nearly oval, — having the ends nearer equal in width.
Obovate. Inversely egg-shaped.
Obovate. Indistinct, as if worn out.
Obovate. Oblongish. Ending bluntly, or in an apex more or less rounded.
Obovate. Blunt with a small point.
Obovate. A term in foliation; applied to leaves where two opposite ones are oblongate, with one edge of each leaf between the edges of the other.
Obovate. Pertaining to the back part of the head.
Obovate. Eye-like spots, as on the wings of some butterflies.
Obovate. A cylindric sheath or scapula. It is applied to the membranaceous stipules of most of the species of *Polygonum*; also of some species of *Cyperus*.
Obovate. Eighth of the Linnaean classes, with eight stamens to a flower.
Obovate. With eight stamens.
Obovate. Eight, in composition; as *Obovate*, eight-lobed; *Obovate*, eight-celled; *Obovate*, eight-petalled; *Obovate*, eight-leaved.
Obovate. The eighth order of a class, it having eight styles to a flower, or sessile stamens.
Obovate. With eight styles.
Obovate. Serrated, oblong.
Obovate. Used in or belonging to stems or drops.
Obovate. A short lateral branch terminated by a cluster of leaves, and capable of taking root when separated from the parent plant.
Obovate. When this terminates a wood, it imports resemblance to the part or plant to which name it is annexed. *Petaloid*, resembling a petal; *Thalictroides*, resembling a *Thalictrum*.
Obovate. Fleety in substance, but filled with oil.
Obovate. Means that the number is small; not definite.
Obovate. Few-seeded.
Obovate. Flowers, &c. on one side of a stem, &c.

Opaque. Neither transparent nor shining.

Oxymoron. Having a lid, as mouse.

Oxycodon. The lid is a pyramid, &c.

Opposite. Standing at the same height, with base against base, on different sides of a stem.

Opposite-quantities. Leaves of a pinnate leaf set opposite in each whorl.

Oppositely. Set opposite to the base of a leaf; as some peduncles and stipules are placed.

Orbicular. Roundish.

Ore. That kind of envelope of filices which is flat, orbicular, not dilated, of the substance of the leaf, sessile, petiole, without a foot, but often intermixed with radiating veins. The membrane, or skin, under which the seeds are lodged, is smooth, mostly of the color of the frond. Spurious ones, lined like shields or syngones, when young, are sometimes found in the genus *Ceratiophora*.

Orchidaceous Corolla. Like the Orchis; having four arched petals, and the fifth longer.

Order. The most important of all the natural associations.

Orders, Names of. Latin adjectives, usually derived from the name of the most prominent genus in each.

Ordinal. Relating to orders.

Orifice. Any hole or opening into a capsule, corolla, &c.

Organic Form. Mannerism or fibres, of which all the tissues are constructed.

Organography. Investigates the organic structure of vegetables.

Orthogonous. When the filum or suture corresponds with the chorda of the ovule.

Ostium. The orifice of the peristomium of *Sphæria*. A little mouth.

Oval. The length exceeding the breadth.

Ovary. The nasal and bellows part of the pistil.

Ovoid. Egg-shaped.

Ovoid. Egg-shaped.

Ovoid. Resembling an egg in general form, or the longitudinal section of it.

Ovula. Little globular bodies produced in the cells of the ovary, destined to become seeds.

P.

Papilla. The surface of a leaf. The upper surface is *papilla superior*; the lower surface *papilla inferior*.

Pedate. A pinnation, process, or elevation in the lower lip of a labiate corolla, which tends more or less to cross the throat.

Pedunculus. Chaffy.

Petal. The leaves situated at the base of each separate flower.

Petals. Hand-shaped; divided deeply, and spreading so as to resemble the hand with spread fingers.

Petalistis. Growing naturally in swamps and marshes.

Petaliform. Petal-shaped, rounded at the ends, narrow in the middle.

Petiole. A compound inflorescence, formed by an irregular branching of the pedicels of the raceme.

Petioled. Disposed in the form of a petiole, or leaviness petioles.

Petalomorphous. Butterfly-shaped.

Piquette. Flecky process or points on vegetables and animals.

Pipillum. Producing small glandular excrements.

Pipuncul. Bearing pappus or stigma, as dialysis.

Pipuncul. Seed down of thistles, &c.

Piquette. Flecky, maddery or blighted.

Pipunculous. Having the consistency of writing paper, and quite opaque.

Pistiloid. Corky, with the top rounded off considerably below where it would terminate in the apex if completed in the corky form.

Pistiloid. Two lines or opposite sides, running nearly equal distances from each other. The opposite edges of a leaf are pistiloid when the leaf is linear, as of grasses.

Pistiloid-veined. Veins all parallel, whether from the base of the leaf to the apex or from the middle.

Pistiloid. Growing upon, or provided by another.

Pistiloidous. A succulent vegetable substance.

Pistiloid. Walled mound. Having an inclining or swelling ring.

- Parent Placenta.** Two placenta to each carpel, one to the right and the other to the left of the dorsal suture and style.
- Pateil.** Deeply divided, almost to the base.
- Parts Primaria.** The three primary parts of a vegetable are, — 1. The root, or descending part. 2. The *herbage*, or ascending part. 3. The *fructification*, comprising the flower and fruit.
- Partes.** Particular, not general. Applying to an entire part of a general whole.
- Partite.** Easily separating into parts.
- Partitile.** Into two parts. *Tripartite*, into three parts, &c.
- Partition.** The membrane, &c. which divides pericarp into cells. It is peculiar when it unites with the valves where they unite with each other. It is *median* or *intermediate* when it marks a valve in the middle, or in any part but at its center or junction with another.
- Partiflorous.** Knee-joint like. Thick concavo-convex, round with the convex surface below.
- Partula.** Orbicular sessile disklike, surrounded by a rim, which is part of itself, not a protraction of the thallus, as in *Leodia*.
- Patent.** Spreading so as to form a moderately acute angle; considerably less than a right one, or a square.
- Patentissimus.** Spreading almost to a right angle; very spreading.
- Patalis.** Slightly spreading; open, loose.
- Patul.** Few in number. Used in composition; as *Patuliflorus*, few-flowered; *Patulifolius*, few-leaved.
- Pavifolius.** Differing from cuneate, in being more elongated.
- Pavium.** Comb-like, with long, narrow segments.
- Palea.** When the palmar leaf has the two lateral lobes cut into two or more segments.
- Pedice.** A partial peduncle of an aggregate.
- Pedunculatus.** Furnished with a peduncle.
- Peduncul.** Flower-stem, not pedicel.
- Peduncul.** Bearing a peduncle, not pedicel.
- Pedunculatus.** Appertaining to, or fixed on, a peduncle.
- Pellis.** A thin, membrane-like substance. The close covering of some seeds; sometimes it is a little mucilaginous or fleshy.
- Pellucid.** Transparent.
- Pellucid.** Shield-like, the nerves radiating in all directions, and all connected by intervening tissue.
- Pendul.** Hanging down.
- Pendulous.** Drooping, hanging down.
- Pentagonus.** When the ribs are disposed so as to form a leaf, but confluent or uniting at the point.
- Pent.** Used in composition; as *Pentagonus*, five-sided; *Pentagonal*, five-cornered; *Pentagonalis*, five-jointed; *Pentaptychus*, five-winged; *Pentaptychus*, five-leaved, &c.
- Pentagonus.** Five styles.
- Pentagonal.** With five sides and five angles.
- Pentagonia.** Five stamens.
- Pentagonum.** With five stamens.
- Pyr.** Guard, as indehiscent, fleshy fruit.
- Perennial.** Enduring three years or more.
- Perfect Flower.** Having both stamens and pistils.
- Perfolium.** When the base lobes of an implexical leaf are united together, so that the stem appears to pass through the leaf.
- Perforatus.** Having holes, or transparent spots, as if pricked through. *Perforate* may differ in penetrating spots like potato, which are not holes. *Perfor.* perhaps, is synonymous with *perforatus*.
- Pericarp.** Floral envelopes consisting of one or more whorls or whorls of leaves surrounding the ovary.
- Pericarp.** The covering or envelope of the seeds.
- Pericarp.** An involution surrounding the base of the peduncle of flowers, among the leaves, but differing from them in form.
- Pericarp.** The membrane by which the spermatophytes are immediately covered.
- Pericarp.** A round, membranous or cartilaginous covering the seeds in some angiospermous fruits; it is also a kind of

- sporidia; *sporulation* is its diminutive.
- Perigonium*. Sometimes substituted for *perianth*; if the floral envelopes are of such a nature that it is not obvious whether they consist of both calyx and corolla, or of calyx only, they receive the name of *perigonium*, or *perigonium*.
- Perigynia*. Inserted into the calyx.
- Perigynium*. A substitute for *perianth*.
- Peristome*. The disc or border surrounding the orifice of the throat of a moss.
- Peristome*. A perianth-like organ surrounding the seed cases of lichens or capsule of the mosses and fungi. Used to express the part which contains the reproductive organs of *Spheria* and its relatives.
- Peristyl*. Directed from the axis to the lumen.
- Peristyl*. Same as *peristyl*.
- Pennisetum*. Laid over with a woolly substance, ending in a sort of wool, as on the tips of some fungi.
- Persistent*. Not falling off, but remaining green or growing until that which bears it is wholly matured.
- Persimmon*. Mottled-lyopet flower.
- Petal*. Petaloid.
- Petal*. The divisions of the corolla.
- Petaliform*. Resembling a petal in shape or texture.
- Petaloid*. Attached to or being part of a petal.
- Petaloid*. Resembling petals.
- Petaloid*. Having a petaloid.
- Petiole*. The foot-stalk of a leaf, or a part which connects the lamina with the stem.
- Petiolate*. A partial petiole which connects the leaflet to the main petiole, as the *petiolate*.
- Pinnate*. Purple, dark-red. Ancient purple.
- Pinnatifid*. Flowering plants.
- Pinnatifid*. Having the stamens and pistils sufficiently apparent for classification. Applied to all plants not included in the class *Cryptogamia*.
- Pinnatifid*. The gelatinous in which the sporidia of *Byssus* first vegetate.
- Physiology*. The science which treats of the principles of vegetables. It is nearly synonymous with *physiology of vegetables*.
- Pilae*. Blackish black, resembling dark pink.
- Pilae*. The hat of a fungus. The top and most spreading part. It may be without stipe, and thus constitute the whole ascending part. It always contains the sporidia.
- Pilae*. Orbicular, hemispherical shields, the exterior of which change to powder in *Calyptra*.
- Piliform*. Bearing hairs.
- Pilae*. Hairy; having distinct, straight hairs.
- Pilae*. A hair. An excretory duct of a bristly form, leading off a fish.
- Pilae*. Wings; the segments of a plant-like leaf.
- Pinnate*. Winged or feathered, where the petiole bears a row of leaflets on each side, generally equal in number and opposite.
- Pinnatifid*. Feather-like, with deep sinuses between all the veins, separating each margin of the leaf into oblong, parallel segments.
- Pistil*. The central organ of most flowers.
- Pistillate*. Bearing pistils.
- Pistillate*. Flower, having pistils only, without stamens; as the *flowers* of the fertile cucumber.
- Pistil*. The spongy substance is the central part of the stem.
- Pistil*. That kind of rosette of li- thium which consists of open, opposite, naked, white or yellow luteous spots on the under side of the frond, which is generally downy. They are at first immersed, globose, minute dots, which at length burst with irregular margins, and discharge a powder.
- Pinnate*. Fleecy rosette or moss developed at each of the two edges of the capillary leaf.
- Pinnatifid*. The disposition of the cytoplasm in the germination of the seeds.
- Pinnate*. The leaf folded like a fan.
- Pinnate*. Convex or rounded on one side and flat on the other.
- Pinnate*. An organized body endowed with vitality, but not with sensation.

Plicata.—Folded like a fan.

Plumose.—Featherlike down, when a hair has other hairs arranged on opposite sides of it.

Pseudium.—The rudiment of the ascending axis of the fungus plant.

Pseudium.—Cap-shaped, with a hemispherical base and an upright limb.

Pul.—Legumes, siliques, &c.

Pulvinate.—The peduncles of lichens, or the stalk-like elongations of the thallus which support the fructification in *Coccidiopsis*.

Purplish.—Central organ of a flower.

Purplish.—Terminating abruptly in a bulb point.

Purplish.—Oblongate or slender stems under the wings of some dipterous insects.

Purplish.—*Purplish*. Persons of all descriptions have frequent occasion to make some use of plants, when they are not in a situation minutely to investigate their nature and qualities. The following rules for extemporaneous examinations may be of some use.

GENERAL RULES FOR AVOIDING POISONS.

Plants not Poisons.

1. Plants with a glass calyx, never poisonous. As Wheat, Indian Corn, Foxtail Grass, Sedge Grass, Oats.

2. Plants whose stamens stand on the edge, never poisonous. As Carrot, Apple, Peach, Strawberry, Thorn.

3. Plants with arrowform flowers, rarely if ever poisonous. As Mustard, Cabbage, Watercress, Turnip.

4. Plants with papilionaceous flowers, rarely if ever poisonous. As Pea, Bean, Locoweed, Wild Indigo, Clover.

5. Plants with lobate corollas, bearing seeds without pericarps, never poisonous. As Cucumber, Hyacinth, Mint, Motherwort, Marjoram.

6. Plants with compound flowers, rarely poisonous. As Sunflower, Dandelion, Lettuce, Endive.

7. Plants bearing strobiles are never poisonous. As Rice, Coborn, &c.

8. Monadelphous or calyciform

plants are never poisonous. As Bellflower, Mallows, Gentianaceae, &c.

Poisonous Plants.

1. Plants with five stamens and unsplit, with a dull-colored hard corolla and of a numerous, sickly smell, always poisonous. As Tobacco, Flax, Apple, Hyacinth, Nightshade. The degree of poison is diminished where the flower is brighter-colored and the smell is less numerous. As potato is less poisonous, though of the same genus with Nightshade.

2. Umbelliform plants of the aquatic kind, and of a numerous scent, are always poisonous. As Water Hemlock, Cow Parsley. But if the smell be pleasant, and they grow in dry land, they are not poisonous. As Fennel, Dill, Coriander, Sweet Scilly.

3. Plants with lobate corollas and seed in capsules, frequently poisonous. As Snapdragons, Foxglove.

4. Plants from which issues a milky juice, on being broken, are poisonous unless they bear compound flowers. As Milkweed, Dogbane, Euphorbia.

5. Plants having any appendage to the calyx or corolla, and bristles or more stamens, generally poisonous. As Columbine, Crowfoot, Narcissus, Monkshood, Bellflower.

MORE GENERAL RULES.

Plants with few stamens, not frequently poisonous, unless they are in umbels; but if the number be twelve or more, and the smell numerous, heavy, and sickly, the plants are generally poisonous.

Note.—Many plants possess some degree of the narcotic principle, which are still by no means harmful. The roots of some are wholesome, while the herbage is poisonous. As Parsnips, Potatoes, &c.

Pollen.—A small yellow dust contained in the cells of the anthers.

Polliniferous.—Bells or masses of pollen, not included in cells of anthers of the common form and structure; as of the Orchis, Asclepias, &c.

Polliniferous.—Bearing pollen.

Polysiphonous. Stamens united in several sets.

Polyspermous. The stamens three, with over ten stamens to each flower, growing on the receptacle.

Polysperous. Belonging to, or resembling, the class *Polysperma*.

Polyspermous. Having the power of bearing fruits many times without perishing, as perennials and woody.

Polystichous. Plants with more than two cotyledons.

Polyspermia. Many unions. The name of the twenty-third class as established by Linnæus.

Polyspermous. Having staminate or pistillate and perfect flowers on the same tree.

Polyspermous. The order of Linnæan classes which has but one or more styles (or stigmas if styles are wanting) to each flower.

Polyspermous. With many seeds.

Polyspermous. Producing various forms and appearances.

Polyspermous. Flowers with distinct petals.

Polyspermous. Many-petalled.

Polyspermous. Many-leaved. A stony of more than one distinct piece is polyspermous.

Polyspermous. Many-seeded.

Polyspermous. Many-seeded.

Pome. Apple, a fleshy, indehiscent pericarp, without valves and containing a capsule.

Pomegranate. Bearing pomegranate, or apple-like fruit. As pomegranate and pomegranate.

Pore. Apertures of perspiration in the cuticle.

Pores. Full of holes, cellules, or tubular openings.

Poreous. Lengthened out, stretched, straightened.

Powdery. Covered with fine bloom as powdery matter.

Prime. Rapproche. Coming to maturity early in the season. Flowering before falling.

Prime. Green, like a lack.

Primæ. Growing naturally in meadow-land.

Primæ. Taken off, remaining bluish.

Primæ. Expansion of the epidermis consisting of hardened cellular tissue.

Primæ. The outer integument of the ovule.

Primæ. Formed like a prism, with three or more angles.

Primæ. Primæ-like. Resembling a projecting horn.

Primæ. Trailing on the ground.

Primæ. Forming young plants about the roots.

Primæ. A distinct body containing the sporidia, separating from the apothecia, often very curved and variable in form, and mostly dissolving into a gelatinous mass.

Primæ. Standing over more or less beyond what is usual in other plants.

Primæ. The under side, or back of a leaf upwards.

Primæ. Tendrils and other climbers.

Primæ. Extending plants by acrode, roots, &c.

Primæ. Apparently on the point of falling.

Primæ. Part of a whole.

Primæ. Is confined to the bark and wood, in which it is mixed with woody fibre. Cellular tissue, the vessels of which are elongated and overlap each other at the extremities, it called *primæ*.

Primæ. Trailing flat on the ground.

Primæ. Where the leaves appear before the flowers.

Primæ. Projecting out, as stamens, &c.

Primæ. Very near. Element next in quality.

Primæ. The weakest or baseness in plants, perches, &c.

Primæ. Covered with a frost-like wool.

Primæ. Hairs which exserting.

Primæ. When pushed to a word, it implies obsolete, or false.

Primæ. Clothed with soft short hairs.

Primæ. That kind of receptacle of lichens, which consists of little round flattened knobs, whose disc finally turns to powder. It is at first covered with a membrane and often clothed with a few gray hairs. These receptacles are elongated below into a stalk fixed to the crust, but totally different from it.

Primæ. Dull brownish color.

inflorescence are largest or furnished with rays.

Radial-nerved. Several nerves of nearly equal size, radiating from the base towards the circumference, each with its own system of veins and vessels.

Radial. Proceeding from the root without the intervention of a stalk.

Rachis. The descending part of the embryo.

Racemose. Applied to the lower scales frequently in the angles of petals, &c. called in English *anthers*. They are thin, brown, foliaceous scales, appearing sometimes in great abundance upon young shoots of the leaves of ferns.

Ramose. Of or belonging to the branches.

Racemulose. Covered with weak, shrivelled, brown, scale-like processes.

Rare. When the leaves grow from the branches.

Ram. Branching, ramifications of the root.

Raphe. That part of the funicular which increases between the hilum and the umbilicus.

Raphe. Little bundles of crystals formed in the cells.

Rarefied. Leaves few and distant.

Rarefied. Flowers few and distant.

Rap. The outer margin or circumference of a compound leaves. It is also applied to the perianth and outer border of an ovule; particularly when they differ in any respect from the inner or disc border.

Raphe. The summit of the flower-stalk.

Inclined. Bent down so that the apex of a leaf, &c. is lower than the base. Applied to the stem, it implies that it is bowed towards the earth.

Reversed. Bent or curved backwards.

Inflated. Curved backwards and downwards.

Refracted. Bent back in an angular form, so as to appear as if broken.

Reptant Vegetabilis. The Vegetabilis *Reptant*, as taken into view with the *Decidua* and *Minora*.

Reptant Class. Linnaeus distributed all plants into twenty-four artificial classes; but his eleventh, eighteenth,

and twenty-third classes are omitted by very many botanists as very inessential in their character. The *Reptant Class* being retained by Nath. Hooker, Dillwyn, and some other distinguished botanists, they are defined here.

Reptantia. The eleventh class of Linnaeus. It includes those plants whose flowers are perfect, and contain from twelve to numerous stamens to each.

Polypetalia. The eighteenth class of Linnaeus. It includes those plants whose flowers are perfect, and contain stamens united by their filaments in more than two parcels.

Polypetalia. The twenty-third class of Linnaeus. It includes those plants whose flowers are perfect and staminate, or pistillate on the same plant, or on different individuals of the same species.

Reptant Order. Monopetalia, the sixth order of Linnaeus in the class Syngenesia. It includes those plants whose flowers are perfect and not compound, and contain stamens with united anthers; as the *Labeia* and *Toukamar*.

Monopetalia, *Dioecia*, and *Trochia* are the three orders of the *reptant class* Polypetalia. The order *Monopetalia* includes those plants which comprise all that is necessary for the character of the class in one plant; *Dioecia*, in two plants; *Trochia*, in three plants.

The order between *Monopetalia* and *Polypetalia*, also beyond *Monopetalia*, are unnecessary. Their definitions are implied under their preceding orders.

Relative Proportions. When dimensions are expressed indefinitely, as long, very long, short, large, &c., such expressions are to be understood as long, &c. compared with the proportion which similar parts usually bear to each part in plants generally. But when such terms are used for specific names, the proportion between the parts of species of the same genus, which were known when the names were given, are compared. Thus *Kil-*

- mit leaflets has a broader leaf than *Kalmia latifolia*; but it has a narrower leaf compared with any species of *Tilia*.
- Kidney.** Kidney-shaped, broad, rounded at the apex, and notched at the base.
- Lapped.** Having the margin slightly concave between the petioles of veins.
- Ligulate.** When the upper part is curved back and applied to the lower.
- Lignivorous.** In plants is analogous to feeding in animals.
- Ligulate.** Inserted.
- Retracted.** Notched; having veins crossing each other like net-work.
- Retracted.** Net-like, net-like.
- Retracted.** When the veins are retracted, or retracted-like.
- Retracted.** Bending in various directions.
- Retracted.** Bent backwards.
- Retracted.** Terminating with a round end, having the centre depressed.
- Retracted.** Bent back towards the base.
- Retracted.** The margins rolled outwards or backwards.
- Rhizomorphous.** Those plants whose roots endure many years, but whose stems perish annually.
- Rhizomorphous.** Root-stalks, a kind of rooting stem, under ground, nearly horizontal, and sending up new plants yearly.
- Rhizomorphous.** First on the root of some ferns.
- Rhizomorphous.** Diamond form.
- Rhizomorphous.** Oval and angular in the middle.
- Rhizomorphous.** Diamond-shaped-like; oval and a little angular against the middle at the edges.
- Rib.** Costa, ridge caused by projecting veins, &c.
- Ribbed.** When the middle sends off lateral ribs nearly straight to the margin. It is sometimes put for curved.
- Rigid.** Stiff, inflexible, or not pliable; or, if attempted to be bent, will rather break.
- Rimose.** Chinked; abounding in cracks, as the outer surface of the pitch-pine tree.
- Ring.** The band around the expanded of ferns, which is elastic.
- Ringed.** Grimming; the tips of the corolla widely separate.
- Rose.** The base of the plant and the principal source of its nourishment.
- Rose.** Form of. Much diversified in different plants.
- Rose.** Growth of. Takes place simply by the addition of new matter at the extremities, and by the formation of new layers upon the surface.
- Rose.** Physiological Structure of. Similar to that of the stem.
- Rose.** Use of. Fixing the plant in the earth and maintaining its position.
- Rose.** Bending or extending to the earth and striking root.
- Rose.** A fibre of a root.
- Rose-form.** Particular; resembling corolla in general structure.
- Rose.** Humid. Appearing as if covered with dew, or with insipid perspiration of the parenchyma.
- Rose.** Like the rose; a corolla formed of rounded, spreading petals, without claws or with extremely short ones.
- Rose.** That pointed part which tends downwards at the first germination of the seed.
- Rose.** With a hook.
- Rose.** Arranged in a radiant manner, like the petals of a double rose.
- Rose.** Wheel-form, border, and usually a tube.
- Rose.** Round. Without angles.
- Rose.** Nearly round.
- Rough.** Covered with dots, which are hard to the touch, but not apparent to the naked eye. Clothed with hairs, the lower joints of which resemble little bulbs, and the upper ones short, rigid bristles.
- Rose.** Rust-colored.
- Rose.** Growing among reddish, about buildings, &c.
- Rose.** Reddish-yellow.
- Rose.** Covered with umbellate dots which are hard to the touch.
- Rose.** The tissue between the reticulated veins, coarser from its superabundance.
- Rose.** When a hard body is pierced in various directions by narrow canals filled with dry, cellular matter.

Stomate. Pinnatifid, with the divisions pointing backwards.
Stom. A short producing roots and leaves at the end only, and from that place giving rise to another plant.
Strepia. Growing naturally among rocks.
Strios. Shining, bright, glossy; not opaque and dull-colored.

S.

Sagitt. With a lag or neck.
Sagitt. Arrow-shaped, with pointed, ascending lobes at the base.
Salm-fem. A monopetalous corolla with a flat spreading limb proceeding from the top of a tube.
Sarcoc. Winged fruit, a dry, indehiscent encased pericarp, with a wing-like appendage.
Sarsoid. Resembling a samara, or winged capsule.
Sax. When boiling in solution minute quantities of various kinds of solid and gaseous matter derived from the soil.
Saxilob. Having some kind of mark. Not insipid.
Sax. Biting + relish, pleasant; any taste. Color sometimes indicates the taste. White berries are generally sweet; red, sour. Blue, sweet and sour; black, insipid and poisonous.
Saxoid. The same and more recent portion of the layers.
Saxory. The fleshy substance between the epicarp and the endocarp.
Saxosum. A running shoot which strikes root at the knee or joint only. Generally applied to shrubs.
Saxifera. Shaped like a common iris flower or pebble.
Saxosa. Rough.
Sax. The leaves of the Compositæ.
Sax. Thin, flat membranous processes, formed of cellular tissue, springing from the outside. They may be considered as flattened hairs.
Sax. Covered more or less with acule appendages, or fern-roots; or consisting of substance as some membra resembling coarse fibrous, as the scales of lily roots.
Sax. The stem from the summit of

the first-stalk which bears the inflorescence of the plant, but not its foliage.
Saxosa. Dry, colorless, membranous.
Saxoid. When the perianth is petal-like before expansion.
Saxoid. Irregular.
Saxosperma. *Delphinium* form. One of the new orders of ferns.
Saxosum. Flat-sided, curved edge-wise; inner edge concave, thick, outer edge convex, thin.
Sax. Shows proceeding laterally from the roots or half of a root.
Saxilob. Deep round pit on the reproductive give it this name.
Saxilla. A shield with an elevated rim, formed by the thallus. Ostia is the ventrals of Utricle.
Saxilifera. Form of the knee-joint, or a suture.
Saxilifera. Cap-bearing. A cup-like dilation of the Podaria, bearing thallus on its margin.
Sax. The genus of some orders and the species of some genera are divided into sections. Sometimes disregarded, and the whole order read over.
Sax. Turned to one side.
Saxosa. The inner integument of the scale.
Sax. The matured part of fructification, destined for the reproduction of the species.
Sax, Vitality of. Have the power of retaining their vitality for many years.
Saxosa. Parts or divisions.
Saxopate. The fifth order of the class Syngenesia, in which the flowers are separated by distinct perianths.
Saxosperma. Half-ringing the stem, with sessile leaves.
Saxosum. Tapering half-cylinder.
Saxosum. Half-cylinder. In form of a round ruler split lengthwise, as onion-leaves.
Saxosum. Half inferior. When the calyx grows on the side of the germ, so that it is rather superior and inferior.
Saxoid. Of the seed.
Saxosilicula. In form of a half-circle.
Saxosum. Half-arrow-form. That

- is, one side wanting); as in the *Ficus pumila*.
- Seminate*. Half-seeds.
- Supportum*. Living through the winter and retaining the leaves.
- Sensu*. Merely on being touched.
- Senes*. Gradually, by little and little. Applied to a form, *sex*, which arises gradually from some other form.
- Sess*. No stalk. Growing without any leaves in such.
- Sepals*. The divisions of a calyx, or trochanth.
- Sepicidal*. When the dehiscence takes place through the dissepiments.
- Sepicidal*. When the valves of the pericarp separate from the dissepiments, which remain still united in the axis.
- Sepium*. When there are seven leaves from the same point in the pericarp.
- Sesum*. A perianth.
- Sevial*. In rows arranged in seven; *Dicervial* in two rows; *Tricervial* in three rows. *Biservial* means in two rows or faces; *Triservial*, in three rows.
- Sericeous*. Silky, covered with soft, close-growing hairs.
- Serotinus*. Coming to maturity late in the season. Applied to willows and to some other plants, it implies that the time of flowering is after the leaf-fall.
- Serrate*. Having sharp teeth pointing forward like the teeth of a saw.
- Serratus*. Very small serratures.
- Serpentine Margin*. Waving edges.
- Sespe*. This term prefixed to the Latin name of a measure shows that such measure exceeds its due length by one half; thus *Sesipendula* means a foot and a half.
- Sesquialter*. When a large fertile flower is accompanied by a small abortive one.
- Sesile*. Setting down; when a leaf, flower, seed down, pileus of a fungus, receptacle of a fungus, &c., is destitute of a pedicel, peduncle, stipe, &c.
- Sinuous or Sine*. Bristly.
- Sinu*. Bearing bristles.
- Sis*. Six. Used in composition, as, *Sisangularis*, six-angled; *Sisphile*, six-lobed; *Sisphora*, six-downed; *Sisfajal*, six-paired; *Sisobolus*, six-celled; *Sisaloma*, six-valved.
- Sis*. Six. When Linnæus first adopted the stamens and pistils as the organs of classification, he addressed his arguments to physicians, who were conversant with animal anatomy. He therefore took advantage of the analogy between animals and vegetables in the reproduction of their kind, in order to illustrate his theory. He called the stamens testes, and the pistils ovaries, &c.
- Sis*. Tapering to a point. *Sis* differs from *sharp*, as it may apply to the tip of a leaf, which becomes broad immediately back of the point.
- Sis*. The lower part of the leaf or leaf-stalk which surrounds the vent.
- Sis*. Surrounding a stem or other body by the corolline base; this chiefly occurs in the perianth of gamæa.
- Sis*. That kind of receptacle of stamens, which is open, orbicular, saucer-like. The underside and border are of the substance and color of the frond. The *disk* is of a different color and substance from the border and frond, containing the seeds in extremely minute vertical cells. The *stigma* are thick and round, when they are inside; and membranous, when outside or elevated. Very rarely they are perforated in the centre.
- Sis*. Shapes resembling the ancient buckler; a broad round, broad oval, fat umbon.
- Sis*. Each tree and shrub sends forth annually a large shoot in the spring, called the spring shoot, and from the end of that a smaller one about the middle of June, called St. John's shoot. There is always the appearance of a joint where the latter springs out, very perceptible after the whole shoot is matured.
- Sis*. A small vegetable with a woody stem.
- Sis*. Having woolly stems or branches; luscious.
- Sis*. Dry; rather humid not moist.
- Sis*. A very much curved, hook-like edge within.
- Sis*. Differs from *siliqua* by being shorter and more easily oval.

- Slender.** The first order of the class *Tritelymnus*. It is distinguished by the length and breadth of the pod being nearly equal; as the pepper-grass.
- Slip.** A pod; a long narrow petiole of two valves, divided into two cells by a false *dissepiment* formed by the coalesced plicature.
- Slipous.** The second order of the class *Tritelymnus*. It is distinguished by the length of the pod greatly exceeding the breadth; as the mustard.
- Silly.** Covered with very fine, compressed hairs; silky to the touch.
- Simple.** Undivided. Single; opposed to compound, aggregate, or branched; or scarcely divided or branched at all.
- Simpleximus.** Very simple.
- Single.** Only one. Also opposed to full-blown.
- Sinisterrimus.** Turning from right to left; thus is contrary to the apparent motion of the sun; as the pole-star.
- Slit.** Having deep, rounded openings between the veins.
- Slit-venous.** Having numerous lateral not; as the chestnut.
- Smit.** The suture formed by the lobes of leaves, &c.
- Silv.** Without a stem.
- Sine.** Situation; as opposite, alternate, &c.
- Sinul.** Divided by deep, taper-pointed cuts.
- Sisil.** Smooth, may not be glabrous.
- Skip of Noses.** The effect of sight upon the external appearance of some plants; as the leaves of peas closing over the very young flowers.
- Succuphous.** Green-green. Greenish.
- Smooth.** Sometimes put for glabrous, but not synonymous with it. For glabrous means sleek or slippery; whereas smooth may be applied to fine chamois leather.
- Sulciferous.** Bearing down.
- Sulid.** Of a uniform substance, but not usually partible, as the soap.
- Silvery.** Standing alone, as very distinct from others of the same kind.
- Silv.** Diverged. Not silvate or growing together.
- Suavulus.** Used as a diminutive; implying, in some degree, not fully.
- Squale.** Inhabiting sleep.
- Squidil silvatus.** Dirty white.
- Seri.** The period of fructification is the back of the female of ferns.
- Serous and Serolis.** Clusters of the fruit of ferns; heaps of powdery bodies lying upon any part of the surface of the thallus; the bodies of which the serolis are composed.
- Spadum.** Chastat-loven.
- Spadic.** A spike with a fleshy rachis enveloped in a large leaf, called spathe.
- Spac.** Seven inches, or the space between the thumb and fore-finger, separated as widely as possible.
- Spangia.** Open and cellular, like sponges, but rarely and not formed of any part of the crust, from which they differ in color, being more usually black. The vessels are lodged beneath the membrane that covers their disc, as in the former, and the disc is surrounded by a proper border. Their walls are observed to be united in the cellular substance of the disc, not enclosed in canals. Disc sometimes concave or flat, seldom convex, and even glabrous, without any apparent border, which is an advanced state.
- Sparsus.** Scattered; used in opposition to whorled, or opposite, or ternate, or other regular order.
- Spatiment.** A span high or a span long.
- Spaul.** The sheath surrounding a spadix or a single flower.
- Spauls; Goss.** Resembling a spathe. A serrated calyx.
- Spatulatus.** Obovate, with the lower end much narrowed and tapering.
- Species.** The lowest division of vegetables, embracing all originating from a common stock.
- Specific Noses.** Latin adjectives of the genus to which they belong.
- Spermatum.** Hair of a seed.
- Splavous.** Withering; becoming blackened.
- Spharoid.** A globe peridium, with a central opening, through which sporidia are emitted, mixed with a gelatinous pulp.
- Spherosus.** Wet, moist, crassus.
- Sphersoid.** A spherical solid, either de-

- pressed at each end, and called an oblate spheroid; or elongated at each end, and called an elongated spheroid.
- Spherule.** Small globules of nearly a spherical form.
- Spadate.** Covered with fine, fleshy, erect points.
- Spile.** An inflorescence consisting of several sessile flowers, arranged along a common peduncle.
- Spiker.** One of the subdivisions of a spike.
- Spines.** Thorns, leafless, hardened, pointed, woody processes, with which some plants are armed.
- Spinescent.** Becoming fleshy.
- Spines.** When the points project far beyond the tissue is sharp spines.
- Spiral.** Twisted like a screw.
- Spiral Vase.** Resemble the woody fibre in form, being a long slender tube, tapering each way, but thinner and weaker.
- Spir-pointed.** Barton substitutes this for cuspidate.
- Spitham.** Short span.
- Spit.** Divided nearly in the base into segments; — *bifid*, in two, *trifid*, in three, &c.
- Spizoides.** The tender and delicate extremities of the stalks.
- Spizoides.** Withersow's name for the columella of mosses.
- Sporopodium.** A name given to the perianth by Rostk.
- Sports.** Bodies analogous to the pollen grains of flowering plants.
- Sporidia.** Granules which resemble spores, but which are of a doubtful nature.
- Sporoxia.** Ovaries filled with spores instead of seeds.
- Sporula.** Spores.
- Spotted.** Having spots differing in color from the principal part.
- Spor.** A prolongation of the pedal.
- Sporred.** Having a spur, or process from the base.
- Sporred Eye, or Sporred Grain.** An enlarged, elongated seed, projecting out of a glume, of a black or violet color, brittle texture, somewhat spur-form. It is that mottled swelling of the seed called *eyot* by the French. The black or dark-colored kind is called the *megastem eyot*, "large down of which cause headache and bilious symptoms. Under proper regulations, it may be considered a valuable addition to the potent stock of medicinal agents. The dose usually administered is from ten grains to half a drachm, in decoction." The pale violet kind, called *simple eyot*, is harmless and inactive. Grain growing in low moist ground, or new land, is most subject to it. Also, spring grain more than winter grain; and rye more than wheat, barley, or oats. When crops are so much infected with it as greatly to injure them, the loss may be in a great measure made up by collecting the *eyot* and selling it to druggists. It should be thoroughly winnowed out of the grain, as it is said to be very injurious to bread. The *eyot* may then be collected from the chaff.
- Sporophore.** Of the form of scales or scales.
- Sporous.** Ragged. When the points of scales, leaves, &c. bend outwards, so as to make a ragged appearance. It is also used for starry, or when covered with a hair-like scarf.
- Spizoides.** Spiked form. One of the new orders of ferns.
- Stamens.** Thread-like organs, situated just within the perianth and around the pistil.
- Stamens.** Consist of: The filament, the anther, and the pollen.
- Stamens and Pistil.** One of: The fertilization of the seed.
- Staminate.** With stamens only leaves.
- Staminate.** Having no oviduct, the stamens serving in its stead.
- Staminate.** Bearing stamens only.
- Staminate.** Same as venillum or latere.
- Staminate.** When one part is less perfectly developed than is usual with plants of the same family.
- Stellate.** Verticillate or whorled, when several leaves are arranged around the stem at the same node.
- Stem.** That part of the plant which originates with the plumule and arises above the surface, expanding itself in the influence of the air and light.

- Stair, Fashion of.* Serves to convey the sap from the roots to the opposite extremities of the plant.
- Stamens.* Having no stem.
- Stamens.* Small glands, often lucid, resembling eyes. They are generally three in number, on the top of the head.
- Stems.* Bases, unjointed.
- Stemless.* Rooting to standing.
- Stigma.* The upper portion or extremity of the style.
- Stings.* Hair-like processes, which excite itching, as on the Nettie. They are generally hollow, with a sick at the base, containing an acrid liquor. By pushing against their points, the ions are compressed, and driven out the liquid.
- Stipe.* The stalk of a pod, of a fungus, &c.
- Stipule.* Stipules which are situated at the base of leaflets.
- Stipule.* Borne on a stipe.
- Stipule.* Leaves furnished with stipules.
- Stipule.* Leaf-like expansions, situated on each side of the petiole at its base.
- Stipe.* A branch proceeding from the stem and descending to the earth, taking root, sending up new shoots, and finally becoming a new plant.
- Stipuleless.* Bearing stipes.
- Stipule.* Apertures or pores of the epidermis.
- Stipuleless.* Where the principal veins pass direct to the margin.
- Stipuleless.* Stem-coloured; stem-like.
- Stipule.* A layer.
- Stipule.* Pedigree. The root-bearing part of the pteropoda of Liliaceae.
- Stipule.* Small streaks, channels, or furrows.
- Stipule.* Streaked. Marked or grooved with slender lines, longitudinally.
- Stipule.* Both stiff and straight, or perfectly straight.
- Stipuleless.* Very stiff and straight.
- Stipule.* Clad with short, stiff, and appressed hairs.
- Stipule.* Coars, an insect with heady scales.
- Stipule.* The layer or covering of some fungi. A fleshy body on which a flocculent substance is attached.
- Stipuleless.* Resembling the twisted spine of the shell of a foraminifer (called a dinner-bone in New England).
- Stipule.* The prolonged columnar part of the ovary, or rather of each carpel, which bears the stigma at its top.
- Stipuleless.* A kind of stem which is spiny and confluent with the style.
- Stipule.* In composition, it denotes a lower degree of the quality, as *Stipuleless* nearly equals.
- Stipuleless.* Corky.
- Stipuleless.* Under water.
- Stipuleless.* Growing and flowering under ground. This may be applied to the shoots of the *Polygala rubella*.
- Stipuleless.* Beneath. Underside.
- Stipuleless.* Axi-shaped.
- Stipuleless.* Generally canaliculated, but sometimes more.
- Stipuleless.* Thick, juicy, and fleshy.
- Stipuleless.* A shoot by which the plant may be propagated. It proceeds from the neck of a plant, at the joining place of stem and root.
- Stipuleless.* Somewhat shrubby.
- Stipuleless.* Stem as well as leaves.
- Stipuleless.* Furrowed or grooved.
- Stipuleless.* Sulphureous.
- Stipuleless.* Exceeding in height.
- Stipuleless.* Above the soil.
- Stipuleless.* Second order of the class *Symptoma*, having the leaves of the disc perfect, of the ray peltate; as *Acorn*.
- Stipuleless.* When the calyx or corolla proceeds from the upper part of the germ.
- Stipuleless.* Upwards, towards the top.
- Stipuleless.* When one edge is rolled upwards, and is enveloped by the opposite edge rolled in an opposite direction.
- Stipuleless.* Face upwards. Upside down.
- Stipuleless.* More than decomposed. When the petiole is divided and the divisions divided or least unctuous, and the last divisions have scales.
- Stipuleless.* Inscribed above the soil, or base, of the leaf.
- Stipuleless.* A kind branch or twig. Applied to the stem or shoot which bears the leaves of junipers.

Scales. A scale-like appearance at the meeting of two parts.

Scumming. Floating beneath the surface of the water.

Sesquiflor. Generally straight and two-edged; sometimes a little arching on one side.

Silvicolous. Growing in woods.

Silvatica. Altogether wild; growing in wild woods.

Sinuated. Divided of all irregularities.

Spinescent. When stems and leaves appear at the same time.

Spurious. When the fruit consists of united carpels.

Synanthous. When the anthers are united into a tube.

Synonym. Different names for the same plant.

Synopsis. A condensed, systematic view of a subject or system.

System. An arrangement of natural bodies according to assumed characters, for the purpose of aiding the mind and memory in acquiring and retaining a knowledge of them.

Systematic History. The arrangement of plants into groups and families, according to their characters.

T.

Tessellæ. Etilon-form. Tere-form.

Tail. A filiform process terminating a seed, &c. As the Virgin's Borer.

Tail-pointed. Excessively acuminate so that the point is long and weak.

Tap-root. When the radicle root tapers from the collar downwards its whole length.

Tarpet. Tharocarpate of lichens which is flat, close-pressed, and attached to the frond by its whole under side, as if glued; sometimes attached to the back of the frond. It is broad, kidney-form, or oblong, rarely irregular; covered with a thin colored disc, with no border, except occasionally a very minute secondary one, which seems to circumscribe it. In an early stage it is convex, and concealed by a thin, gelatinous, fugacious membrane of m.

Tartarous. Having a rough, scabbling surface.

Terniflor. Nearly the same as tern-shaped.

Teste of Memon. The outer fringe of the peristomium is generally in four, eight, sixteen, thirty-two, or sixty-four divisions, which are called teeth.

Tymant. The skin or bark of seeds; as appears very distinct on a beaked pea or bean.

Temperament. The degree of heat and cold to which any plant is subject. This is not limited to degree of latitude; as high mountains in Fronglancia produce many plants more natural about Hudson's Bay. In cold regions white and blue petals principally prevail; in warm regions, red and other bright strong colors. In the spring season white petals predominate; towards autumn the yellow are most prevalent.

Tenue. That kind of appendage which is filiform and reaches out to grasp bodies to climb by. As the claspers of grapes and peas.

Tenella. Tendre, delicate, and fragile.

Tenuifolius. Slender-leaved.

Tenuis. Thin and slender.

Tento. Rounded or cylindrical.

Ternous. Three-parted. The petiole is forked, three branches forked, and the last branches with paired leaflets.

Tern. Technical terms should be defined in a dictionary of each science and art. But words used in their common acceptation, whether Greek, Latin, English, French, &c., should not be defined in such a dictionary, however frequently applied in each science or art.

Ternous. Berre at the summit.

Ternous. Three-fold, in three; when three leaflets proceed from the end of one petiole.

Tessellæ. Checkered, tessellated.

Tern. The first or outer members of the isogram.

Tern. Four. Used in composition; as, *Ternoglossa*, four-cornered; *Ternopetala*, four-petalled; *Ternophyllæ*, four-leaved; *Ternopogon*, four-winged; *Ternopennis*, four-seeded; *Ternobolus*, four-ribbed pod or capsule.

Tetralysium. The Liliaceae class whose flowers have six stamens, four of which are longer than the other two; the flowers are always cratiform, and the plants contain nitrogen.

Tetradynamous. With two short and five long stamens.

Tetragynis. The fourth order of the classes before *Didymnia*. It has four styles (or sessile stigmas) to each flower.

Treatment: With 500 mg daily.

Tetrandria. The fourth class of Linnaeus, having four stamens to each flower.

Taxandria. With four stamens.

Thaligera. A class of Cryptocarya.

Thallus. That part of lichens which bears the fructification.

Three. The vessels which contain the members of the *Crematogaster*.

Thorn. A leafless, barbed, pointed, woody process with which some plants are armed.

Three-sided. Having three acute angles, with concave faces.

Three-cornered. Having three longitudinal angles and three plain faces.

Pharynx. The orifice of the tube of the oesophagus.

Thrust: A condensed particle.

Type. The most common stem. *Stem*
used unqualifiedly means male.

Juncus.—Plants suitable for drying or elements.

Five: The ordinary height of a full-sized man: about six feet.

Testes.—Hairs expanded and curved.

Yusuf, D.

Tore. Irregularly divided by deep incisions.

Form. Unwin or undulating on the surface.

Torsia. *Torsia lewada*.

Torsion. An irregular bending, technique to twisting direction.

Tonalite. With swelling ridges, like the tonchmalite.

Total Expendable

Turkey. The air-vessels of Grew. They are spiral channels supposed by Grew to be designed for receiving and distributing air in vegetables.

Trailing. Creeping or lying on the ground.

Translucent. Transmitting light faintly; perforce.

Testimony, Cross-exam.

Trapeziformis. Having four unequal edges. But none of these opposite edges exactly parallel.

Tree. A large woody plant, with a bole.

Tree-form. Divided at the top into a number of fine ramifications, so as to resemble the form of a tree.

Tri, *Tri*. Three; used in composition; as, *Trichomanes*, three-forked; *Tricoma*, three-grained; *Triacanthus*, three-pointed; *Tridentatus*, three-toothed; *Triduum*, three days' duration; *Triferus*, having three ways; *Trifidus*, three-cleft; *Triflorus*, three-flowered; *Trifolius*, three-leaved; *Trifidus*, three-forked; *Trigonus*, three-cornered; *Triplex*, three-paired; *Trilobus*, three-lobed; *Trilocularis*, three-celled; *Trinervis*, three-nerved; *Trium*, with leaves in threes; *Tripartitus*, three-parted deeply; *Tripetalus*, three-petalled; *Triphylus*, three-leaved; *Triplinnatus*, three-pinnate (petiole pinnate, and three again pinnate); *Triplinnatifidus*, triplinnatifid (pinnatifid leaves again and again pinnatifid); *Triplinnatus*, three-nerved, or three-nerved; *Triplinnatus*, three-compound; *Triplex*, three-winged; *Triplex*, three-sided; *Triplex*, three-seeded; *Triplex*, three in threes (petioles divided into three three times).

Triandria. The third Lécoréen class, having three stamens to each flower; as *all. grisea*.

Trindrea. With three stamens.

Triangular. Having three angles or corners. It is applied to a leaf with three points or corners.

T. fraxinosa. Mariner does leave.

Trine. Button-form. A shield of lithium, the surface of which is covered with silicious, concentric laminae.

Tricholium. Is a tender, simple, or sometimes branched leaf, which supports the sporidia of some fungi; as *Geastrum*.

Tricuspidate. Having three lobes.

Tridentate. Three-toothed.

1982 Through 1984

Triplex. The third order of any class

- lack of Didymia; having three styles, or acule stigmas, to the flower.
- Tripinnate*. *Trifurc-pinnate*; when the leaflets of a bipinnate leaf become pinnate.
- Trisectate*. When the leaflets of a bipinnate leaf become again trisectate.
- Trivial Name*. The name of a species, not including the descriptive terms. *Trivial name* is now superfluous; as *specific name* is no longer used for the descriptive terms.
- Trumpet-shaped*. Hollow, and dilated at one extremity.
- Tubercle*. Blind, as if cut square off.
- Tuber*. The central scion or axis, which supports the branching tops of trees.
- Tube*. The hollow cylinder of a monopetalous corolla.
- Tuber*. An annual thickened portion of a subterranean stem, provided with latent buds, from which new plants arise the succeeding year.
- Tubercle*. That kind of receptacle of tubers which is spherical or slightly conic, mostly closed, crustaceous, black; more or less immersed in the surface of the crustaceous flesh, which it elevates; or sometimes it is exposed, being nearly sessile. Each contains a ball, or mass of connected seeds, destitute of cells, enveloped in a common membrane. The whole mass of seeds is at length discharged together by an orifice at the top of the tubercle. These tubercles are often found after the seeds are discharged.
- Tuberculate*. Warty.
- Tuberculate*. Is a convex shield without an elevated rim.
- Tubercifera*. Bearing tubers.
- Tuberosa*. Roots which are thick and fleshy, but not of any regularly globular form.
- Tubular*. Having a tube, or being in the form of a tube.
- Tubulus*. That ovicell of a compound flower, which forms a whole tube, not a ligulate throat. It is also applied to a perianth, if the whole or the lower part is a hollow cylinder.
- Typhal*. In a bunch or bundle, as pine leaves.
- Umbels*. Coated. Covered as with a garment.
- Umbonal*. Bulbs that consist of concentric layers, each entire, and including all within it.
- Umbonate*. Shaped like a top.
- Umbel*. Seedling.
- Umbra*. Immature, acule shoots, as of the asparagus.
- Umbiform*. A flattened sphere.
- Umbra*. Two connected or growing together.
- Umbra*. Ascending spirally.
- Umbra*. Connected without obliquity of insertion.
- Umbra*. Compressed, with sharp edges.
- Umbra*, or *Umbra*. Rows on opposite sides.

U.

- Umbra*. Growing in damp places, or ferns.
- Umbel*. Like the corymb, but the pedicels are of nearly equal length, and all arise from the same point in the common peduncle.
- Umbelliform*. Bearing umbels; as carrot, dill, fennel.
- Umbellifer*. Secondary umbel.
- Umbellate*. Depressed to the centre.
- Umbonate*. Having strong protuberances.
- Umbra*. Resembling an expanded modern umbella [a violation of the Linnaean rule, rejecting modern names]. A convex, radiated hemisphere.
- Umbra*. Under color. Smell-brown. A brown shade.
- Umbra*. Having no thorns nor prickles.
- Umbra*. As long as the thumb-nail.
- Umbra*. Hooked at the end.
- Umbra*. Warty.
- Umbra*. The parts not corresponding in size, form, direction, or symmetry.
- Umbra*. A petal with a claw. Clam-like.
- Umbra*. The claw, as of a petal.
- Umbra*. In the form of a horse's hoof; as common tooth-wood.
- Umbra*. Having one capsule to each flower.
- Umbra*. All parts alike, or corresponding symmetrically.

Unilateral Obovate.
Unilobular Obovate.
Unilobular. Having one *expansum* cell.
Umbil. A little bag-like reservoir, for sap, air, &c.
Umbilic. Bulging out like a pucker, and not contracting much at top.
Umbil. Singing, armed with wings.
Umbilic. Swelling in the middle and contracting at the top; as the calyx of the rose.
Umbilic. Swell in grain.
Umbilic. A little bladder.
Umbilic. Sharpening at both ends.
Umbilic. Stock, downy, &c., both sides.

V.

Vaginal Sheath. That prolongation of a leaf, which forms a cylinder around the stem.
Vaginal. Sheathing.
Vaginal. Sheathed.
Vaginal. Applied to each other by the margins only.
Vaginal. Resembling the valves of a clam.
Vaginal. The several pieces of a pericarp, which separate naturally in ripening.
Vaginal. Changes produced among plants of the same species.
Vaginal. Spinal vessels with their modifications.
Vaginal. Flowering plants.
Vaginal. Large tubes called dotted ducts, having numerous little pits sunk in the thickness of its lining.
Vaginal. Arched over like the roof of the mouth; as the upper lip of some labiate corollas.
Vaginal. An organized substance, whose preservative organs decay before the individual dies.
Vaginal Physiology. That part of Botany which relates to the phenomena of the vital functions of plants.
Vaginal. Variety of. Equally remarkable for its rich and boundless variety as for its wide diffusion.
Vaginal. In *Explosion*. Caused by the quickening energy of the Cause.

Vaginal. Calyx of *madroana*.
Vaginal. The primary divisions cast off from the mother as marion.
Vaginal. Branches of the veins.
Vaginal. or *Vaginal*. A horizontal membrane, connecting the margins of the plicae with the stipes; when it is adnate with the surface of the plicae, it is universal; when it extends only from the margin of the plicae to the stipes, it is partial.
Vaginal. Velvety. Covered with soft, short hairs, densely set, so as to resemble velvet to the feel.
Vaginal. When hairs are short, very dense and soft, but rather rigid, and forming a surface like velvet.
Vaginal. Clothed with a dense, soft pubescence.
Vaginal. The manner in which the veins are divided and distributed.
Vaginal. Aperture for the discharge of both juices and urine.
Vaginal. The inner edges of the corpal, formed by the united margins.
Vaginal. The large cavities of the horn.
Vaginal. Swelling out as if blown up with the wind. Or rather belled out.
Vaginal. Coming forth early in the spring.
Vaginal. The particular manner in which the young leaves are folded in the bud.
Vaginal. Various formed prothecases, solid and usually smooth, on the crust of some lichens. Sometimes the receptacles grow on them. They often appear to be warts or conical excrescences, formed of cellular tissue, filled with opaque matter.
Vaginal. Warty. Having little warty, knob-like substance on the surface.
Vaginal. Lying horizontally and meeting body on a point. Particularly applied to anthers lying on the point of the filaments.
Vaginal. Standing, or hanging up and down at right angles with the horizon; or parallel to the stem.
Vaginal. Reduced eyes occupying the opposite ends of each pair of leaves.
Vaginal. Whorled; more than two in a circle at each node.
Vaginal. Leaves or flowers surrounded.

- ing a stem. Petals, sepals, and the undivided sections of calyx and corolla, are metamorphosed leaves in whorls, also stems.
- Floeside.** Inflations of the thallus, filled with air, by means of which the plants are enabled to float on the surface.
- Flooside.** Blakbery.
- Flooside.** When the banner of a papilionaceous corolla greatly exceeds the wings in size.
- Flooside.** The upper and largest petal of a papilionaceous corolla.
- Flooside.** The determined hours of the day when certain plants expand and shut their flowers.
- Flooside.** Yellow, clothed with long hairs.
- Flooside.** A white. A ring which is slender and flexible.
- Flooside.** Moss which, being too weak to stand erect, creep along the ground or suberose, and do not throw out roots like the mosses.
- Flooside.** Violet-colored.
- Flooside.** Inclining to green.
- Flooside.** Wand like. Slender red.
- Flooside.** Green, greenish.
- Flooside.** Nauseous, disgusting smell.
- Flooside.**
- Flooside.** Chummy, sticky.
- Flooside.** Chummy. Possessing an adhesive quality.
- Flooside.** Yellow, with a tinge of red.
- Flooside.** A thin substance in the seeds of some plants, closely connected with the embryo, but never rising out of the ground with it in germination. It is never in places with genuine ascending cotyledons; and perhaps it may serve to perfect the formation of cotyledons. It is between the albumen and embryo, when albumen is present. It composes the bulk of the seeds of mosses and ferns.
- Flooside.** Anopercles of secretion in the seed of Umbellifera.
- Flooside.** Glossy, colorless.
- Flooside.** Producing its allymagalite, either by balls instead of seeds, or by seeds persisting on the plant.
- W.**
- Wad.** or **Wag.** Curved, sigmoid.
- Wag.** Having the color and texture of new-made wax.
- Wag-few.** (Chenop.) with straightish sides.
- Wag-few.** A monopetalous corolla, with a spreading border, and an extremely short tube, or none.
- Wag-few.** Long, tapering gradually, simple, — resembling a whip-lash.
- Wag-few.** Covered with an opaque white powder.
- Wag-few.** When three or more leaves arise at each node and are disposed in a circle, they are verticillate, or whorled.
- Wag.** The two side petals in a papilionaceous corolla. It is also applied to the membranes affixed to seeds or pericarp. *Monopterygia*, one-winged; *Dipterygia*, two-winged; *Tripterygia*, three-winged; *Tetrapterygia*, four-winged; *Pentapterygia*, five-winged; *Polypterygia*, many-winged.
- Wag.** Margined, fattened or expanded locally into a border.
- Wag.** A flexible wand. Twisted twig.
- Wag-few.** Having a dwarfed and decaying appearance, though not actually in a state of decay; as the flowers of elm.
- Wag.** The most solid part of trunk and root of trees and shrubs.
- Wag-few, or Wag-few.** Slender, transparent, membranous tubes, tapering at a point each way and adhering together by their sides, the end of one tube extending beyond that of another as far as to form continuous threads.
- W.**
- Wag.** Decumbent; bending alternately in opposite directions.
- Wag-few.** Animal plants.



No 1.
ROSA CERVIFOLIA
Hundred-leaved or Proserpine Rose.



MATERIA MEDICA BOTANICA.

ROSACEÆ.

The Rose Family.

No. 1.

ROSA CENTIFOLIA.

HUNDRED-LEAVED, OR PROVENCE ROSE.

Geog. Position. Europe.

Quality. Fragrant.

Power. Astringent, tonic.

Use. Ophthalmia, debility.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER ROSACEÆ.

Linnean Classification.

CLASS XII. *Rosaceæ.* ORDER *Polygynia.*

Authoritat. — *Lin.* Sp. Pl. 504. *Willd.* Sp. Pl. II. 607. *Woodw.* Med. Bot. 103. *Lindl.* Fl. Med. 228. *Hb. Mod.* Flor. II. 228. *Whittw.* Med. Dic. 37. *Levd. Disp.* 547. *U. S. Disp.* 608. *Ec. Disp.* U. S. 348. *Levd. Encyc.* Pl. 448. *Bullard and Garrod.* Mat. Med. 264. *Thomson.* Mac. Med. 798. *Perriss.* El. Mat. Med. II. 538. *Griff.* Med. Bot. 274. *Gray.* Bot. S. U. S. 126. *Bourc.* Fun. Pl. 677. *Wood.* Class-Book, 246.

GENUS ROSA.

From *Rhōs*, signifying red in Attic Greek, whence *rhōs*, Greek, and *Rosa*, Latin; or from Latin *Ros*, dew, dew-flower, from the drops of dew found on its leaves and flowers, early in the morning; or from Celtic *Rhos* or *Rhudd*, red, alluding to the prevailing color of the flower.

SYNONYMS. — La Rose (Fr.). Rósen (Ger.). Rosas (Span.). Rosa (Ital.). Rosas (Arab.). Rosas (Pers.). Rosas (Hind.). Rosas (Tart.). Rosas (Arab.). Rosas (Pers.). Rosas (Hind.). Rosas (Tart.). Rosas (Arab.). Rosas (Pers.). Rosas (Hind.). Rosas (Tart.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals five, rarely fewer, united, often reinforced by as many bracts.

COROLLA. Petals five, regular, rarely wanting, inserted on the disc which lines the orifice of the calyx.

STAMENS. Indefinite, usually numerous, arising from the calyx, distinct.

OVARY. Superior, one or several, distinct, one-celled; often coherent to the sides of the calyx and each other. Styles distinct or united.

FRUIT. A drupe, pome, schizocarp, or follicle.

SEEDS. Suspended, rarely ascending.

THE SECONDARY CHARACTERS.

ROSA. Calyx-tube urceolate, fleshy, contracted at the orifice. Limb five-cleft. The segments somewhat imbricated in aestivation and mostly with a leafy appendage. Petals five (greatly multiplied by culture). Achænia indefinite, bony, hispid, included in and attached to the inside of the fleshy tube of the calyx.

Calyx urceolate, inferior, five-cleft, fleshy, contracted towards the top. Petals five. Carpels numerous, bristly, fixed in the side of the calyx within.

THE SPECIFIC CHARACTERS.

ROSA CENTIFOLIA. Prickles nearly straight, scarcely dilated at base. Leaflets five-seven, ovate, glandular-ciliate on the margin, subpilose beneath. Flower-bud short-ovoid. Sepals spreading (not deflexed) in flower. Fruit ovoid. Calyx and peduncle glandular-hispid, viscid, and fragrant.

Tube of the calyx ovate, and, with the peduncle, hispid. Stem hispid, prickly. Leaves pubescent beneath. Petals variegated.

THE ARTIFICIAL CHARACTERS.

CLASS Icosandria. **Stamens** twenty or more, arising from the calyx (perigynous). **ORDER** Polygynia. **Leaves** alternate. **Styles** one-many. **Ovary** free or adherent.

NATURAL HISTORY.

The Rose is known by every one at first sight, and has been the choice and favorite flower—the queen of flowers—from time immemorial, among the civilized nations of the earth. No flower, however, is more difficult to define than the Rose, and the difficulty arises in consequence of several curious facts in its natural history. The Rose is the only flower that is beautiful in all its stages, from the instant the calyx bursts and shows a streak of the corolla, until it is full-blown. Again, there is no other flower that is really rich in

its confusion, or that is not the less elegant for the total absence of all uniformity and order. These facts naturally give rise to various opinions as to the actual state in which the Rose is most splendid, and multiply the difficulties in estimating the properties which should constitute perfection. The very fact of the Rose being beautiful from the time its calyx bursts, makes the single and semi-double roses, up to a certain stage, as good as are the perfectly double roses: and yet there is in the construction of some varieties a circumstance which makes them lose their beauty when they are full blown. The moss rose, for instance, is a magnificent object as long as the calyx is seen, but as soon as the flower fully expands, all the distinctions between a moss rose and a common rose have departed or are concealed.

The rose-bush varies in size in different species, from one foot to six or eight, and the colors are red, white, yellow, purple, black, striped, simple, and in almost numberless shades and mixtures. It is native chiefly of the temperate or cold climates of the northern hemisphere.

Botanists are not agreed as to the native country of the rose; nor have they determined the precise number of original species of this genus: some regard all the European species as originated from one source; others, particularly the moderns, divide them into species, sub-species, and varieties. The Rose, however, is of an extensive family, and far from being distinctly characterized. Those denominated varieties are extremely numerous, and often permanently uniform; and the specific differences, as hitherto pointed out, are, in many respects, so inadequate for satisfactory discrimination, that it becomes difficult to say which are species and which are varieties only.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

From chemical analysis, the Rose appears to contain tannin, sugar, myricine, resin, fat oil, volatile oil, acids, salts, &c. It results also, from the same experiments, that the roots, stems, buds, and fruit of all the species are found to be astringent, sweetish, corroborant, and are indiscriminately used.

It may be remarked, however, that in some instances they have, under certain circumstances, produced alarming symptoms,—as swelling, inflammation of the eyes, faintings, hysterical affections, abortion, &c. Many other instances are

related by Sebenokius. Persons confined in a close room, with a large quantity of roses, have been in danger of immediate extinction of life. From the experiments of Priestley and Ingenhousz, this effect seems owing to the mephitic air which these and most other odoriferous flowers exhale.

The blossoms of the red rose, *ROSA GALLICA*, are less fragrant than those of some other species, but they improve by drying; the taste is pleasantly bitter and astringent. Water at 212° extracts both the odor and the taste; and the infusion strikes a black, with sulphate of iron, and also forms a precipitate of a dark color, with sulphate of zinc.

The infusion of roses is indebted for any astringency it possesses chiefly to the acid it contains, particularly as a gargle in cynanche tonsillaris; but it is chiefly employed as an elegant vehicle for more active remedies, particularly sulphate of magnesia, the nauseous taste of which it very effectually covers.

A syrup made by infusing the flowers of the Rose twenty-four hours in boiling water, and, after straining the liquor, adding twice its weight of sugar, is an excellent purge for children; and for adults of a costive habit, a small quantity taken at night will keep the bowels soluble and constantly open.

Rose-water was first made in Persia, and the Persian rose-water was long the most celebrated for its excellence. This water has the agreeable odor of the Rose in great perfection, when properly prepared, which, however, is seldom the case, except when it is made on a large scale. It is very apt to spoil, unless it be rectified by a second distillation, but spirits of wine ought not to be added to rose-water. As rose-water is perfectly free from any acrimony, and, except in point of odor, does not differ from simple distilled water, it is very generally employed in collyria with acetate and superacetate of lead, and acetate and sulphate of zinc.

- The process for making Otter, or essential oil of roses, so much esteemed as a perfume, is as follows:—Forty pounds of roses, the petals of *ROSA DAMASCENA*, are put into a still with sixty pounds of water. The mass being well mixed, a gentle fire is put under the still, and when the fumes begin to rise, the cap and pipe are properly fixed and luted. When the impregnated water begins to come over, the fire is lessened by gentle degrees, and the distillation continued until thirty pounds of water are come over, which is generally done in about four or five hours. This water is to be poured upon forty pounds of fresh roses, and thence are to be drawn from fifteen to twenty pounds of distilled water, by the same process as before. It is then poured into pans of earthen-ware, or of tinned metal, and left exposed to the fresh air for the night. The otter or essence will be found, in the morning, congealed and swimming at the top of the water.



NI 2.

SANGUINARIA CANADENSIS.
Blood Root. Red Puccoon.



PAPAVERACEÆ.

The Poppy Family.

No. 2.

SANGUINARIA CANADENSIS.

BLOOD-ROOT. *Red Puccoon.* *Blood-scent.*

Geog. Position. Mountains, woods.

Quality. Bitter.

Power. Deobstruent, acriol.

Use. Cleansing the blood.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER PAPAVERACEÆ.

Linnean Classification.

CLASS XIII. *Polyandria.* ORDER *Monogynia.*

APPROPRIATES — *Lin. Sp. Pl.* 722. *Willd. Sp. Pl.* II. 1193. *Pursh. Flor. N. A.* 364. *Ind. Flor. Med.* 16. *Burkew. Med. Bot.* 1. 75. *Burton. Veg. Mat. Med.* 1. 31. *Raf. Med. Flor.* II. 78. *U. S. Disp.* 526. *Ex. Disp. U. S.* 368. *Lead. Enay.* Pl. 400. *Ballard and Garrod. Mat. Med.* 208. *Thomson. Mat. Med.* 77. *Pereira. El. Mat. Med.* II. 722. *Griff. Med. Bot.* 117. *Gray. Bot. N. U. S.* 27. *Beuch. Elem. Pl.* 622. *Howard. Bot. Med.* 291. *Kist. Med. Med.* 363. *Wood. Class-Book.* 135.

GENUS SANGUINARIA.

From Lat. *Sanguis*, *blood*, the color of its juice: All parts of the plant, on being wounded, discharge a blood-colored fluid.

SYNONYMS — *Sanguinaria de Canada* (Fr.), *Canadisches Blutkraut* (Ger.), *Puccoon* (Ind.).

THE ESSENTIAL CHARACTERS.

CALYX. *Seeds* two, rarely three, deciduous, imbricated in aestivation.

CORDILA. *Petals* four, rarely five or six, hypogynous.

STAMENS. Often numerous, but some multiple of four, rarely polyadelphous. *Anthers* innate.

OVARY. Solitary. *Style* short or none. *Stigma* two, or, if more, stellate upon the flat apex of the ovary.

FRUIT. Either pod-shaped with two parietal placentae, or capsular with several.

SEEDS. Numerous, minute. Embryo minute, at the base of oily albumen.

THE SECONDARY CHARACTERS.

SANGUINARIA. Sepals two, caducous. Petals eight, in two series, those of the outer series longer. Stamens numerous. Stigma one, two-lobed, sessile. Capsule pod-like, oblong, one-celled, two-valved, acute at each end, many-seeded.

Calyx caducous, two-lobed. Ovary about eight-ribbed. Stigma sessile, reniform, two-grooved. Upright pod-like, acute, one-celled, two-valved, acute at each end. Folios caducous. Corolla two, permanent.

THE SPECIFIC CHARACTERS.

SANGUINARIA CANADENSIS. Leaves solitary, radical, reniform. Scape hooked, one-flowered, sheathed at base. Petals spreading, regular.

THE ARTIFICIAL CHARACTERS.

CLASS POLYANDRIA. STAMENS twenty or more, arising from the receptacle (hypogynous). ORDER MONOCYRIA. Ovaries compound. Placentae parietal. Sepals two (or three). Juice colored.

Leaves subcordate, acute lobed. Scape one-flowered.

NATURAL HISTORY.

The SANGUINARIA CANADENSIS is an herbaceous perennial plant, and one of the earliest and most beautiful and delicate vegetables of our country. It is particularly interesting from its flowering at a season when there is little or no general verdure, and scarcely any thing in bloom except trees, the inconspicuous fluorescence of which does not render them in general very attractive. The flower appears very early in the spring, while the weather is still cold, and frost not uncommon. Accordingly, on its first appearance above the ground, and for some time after, it is beautifully inclosed in one of the leaves, which forms, as it were, a kind of involucre to it.

The plant is also one of the most abundant in the United States, growing plentifully from Canada to Florida. It ap-

pears in the spring, flowers throughout March and April, during which the seed becomes ripe. It grows exuberantly in a light, loamy, rich soil, on the declivities of hills, and on the exposed borders of shady woods; and may be propagated by parting the roots in the spring and autumn.

The petals of the *SANGUINARIA CANADENSIS* connive every evening, for several evenings successively, even after impregnation; and from the tendency of this plant to multiply its petals in favorable situations, it is rendered likely that culture would readily produce a double variety.

The root-stalk is fleshy, tuberous, and when broken or bruised, as well as every other part of the plant, exudes a blood-colored fluid. From each bud of the root-stalk there springs a single large glaucous leaf, and a scape about six inches high, with a single flower. The whole plant is smooth. The leaf is kidney-shaped, with roundish lobes, separated by roundish sinuses. The flower is white, square, and on a round scape. It is scentless and of very short duration.

When the plant is in blossom, the leaves are small; they, however, continue to grow larger; and, after the fall of the flower, by the middle of summer, the leaves become so large as to give the plant an entirely different aspect.

Among the Indians this plant was always held in high estimation; they called it *Puccoon*, and made use of the red juice to paint themselves, and dye or stain their skins, ornaments, baskets, &c.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

From the result of the chemical analysis of *Sanguinaria Canadensis*, by several eminent chemists, it appears that a gum, a resin, and a saponaceous or extractive matter are detected in the root, and that the gum is in the greatest abundance. It results also from the same experiments, that the active principle of the plant resides chiefly in the gum and extractive matter, but especially in the former. Alcohol dissolves the color of the root better than water; paper and cloth dipped in the solution are dyed of a salmon-color.

From experiments, made with a view to find a suitable mordant to fix the dye, it appears that the color of flannel and silk stained with the juice of the *Sanguinaria Canadensis*, could never be entirely washed out; and that the sulphate of alumine, or alumine alone, and the matico-sulphate of tin, are tolerably good mordants for flannel, cotton,

silk, and linen. Muriate-sulphate of tin was the only mordant that fixed the color on cotton and linen. If success is obtained in fixing the color permanently, there can be no doubt that the dye obtained from this plant may become a highly important article in our domestic manufactures.

This plant is one of the most valuable medical articles of our country, but it requires to be administered with great care and skill, without which it may prove dangerous.

The root of the *Sanguinaria Canadensis* possesses an alkali, to the presence of which the efficacy of the plant is wholly attributable. This may be obtained as follows:—Digest the bruised root in three parts of cold, diluted sulphuric acid (water 10, acid 1); after twenty-four hours, decant the fluid and repeat the operation twice, using water but slightly acidulated; mix the liquors, and filter, and to the clear, red liquor which passes, add a solution of ammonia, so long as it occasions precipitation. Decant the fluid after subsidence, and wash the brown precipitate in cold water; it is sanguinaria, combined with extractive and coloring matter, and mixed with some earths. Dissolve the soluble part in warm alcohol, and wash with the same. Distil the clear fluid from a glass retort. When the solution becomes turbid by concentration, it must be decanted, while hot, into cylindrical vessels, one half filled with pure, cold water. The alkali is precipitated in the form of a yellowish-white bulky powder, mingled with a substance insoluble in diluted acids, and resembling resin: by dissolving the soluble part in muriatic acid, with ten of water, precipitating by ammonia, and treating as above, the alkali is obtained pure. It is a soft white powder, destitute of odor, but having a bitter acid taste. It renders blue vegetable colors green: when heated, it melts into a brown, transparent, and brittle substance. It dissolves in most acids, and forms, along with them, neutral salts of a pure scarlet-red color. The salts are soluble in water, to which they communicate their red color: they are inodorous, but their powder produces great irritation in the nostrils: they are all precipitated by infusion of galls, and are decomposed by alkalies and alkaline earths.

The leaves of this plant are powerful deleterious stimulants. Farmers apply them in the diseases of horses, to make them sweat, shed their coats, &c. The seeds are violent narcotics; producing fever, delirium, dilated pupil, &c. They are sometimes used as incitants, diaphoretics, and diuretics, but are dangerous and deleterious. The virtues of the root are rapidly deteriorated by time.

The dose, with a view to its emetic operation, is from ten to twenty grains, in the form of pills. For other purposes, the dose is from one to five grains, repeated more or less frequently, according to the effects desired.



Nº 2.

STATICE LIMONIUM.

Thais-Maria Brevinay





PLUMBAGINACEÆ.

The Plantain Family.

No. 3.

STATICE LIMONIUM.

THRIFT. *Marsh Rosemary.*

Geog. Position: Europe, sea-coast of Arabia.

Quality: Bitter, styptic.

Power: Astringent, antiseptic.

Use: Debility, hæmorrhage.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER PLUMBAGINACEÆ.

Linnean Classification.

CLASS V. *Pentandria.* ORDER *Pentagynia.*

AFROCARPUS. — Willd. Sp. Pl. II. 1392. Persh. Flor. N. A. 212. Lind. Flor. Med. 473. Bigelow, Med. Bot., II. 251. Raf. Med. Flor., II. 99. Willdow, Med. Diet. 58. U. S. Disp. 686. Ec. Disp. U. S. 221. Lind. Vagyn. Pl. 124. Geoff. Med. Bot. 324. Gray, Bot. N. U. S. 273. Benth. Farn. Ph. 656. Kunt. Mat. Med. 473. Wood, Class Book, 389.

GENUS STATICE.

From the Greek *statizein*, to stop; being supposed to stop the sea. Fls. Lili. 25, esp. 8. The English name Throat from its being an abundant grower, and of close texture; and, as such, employed to bookeen in gardens.

SYNONYMES. — *Statice*, L'Amour (Fr.); *Das Seegras* (Ger.); *Statice* (It.); *Statice* (Sp.); *Zeegras* (Dutch); *Sesuvium* (Swed.).

THE ESSENTIAL CHARACTERS.

CALYX. Tubular, five-toothed, plaited, persistent.

COROLLA. Regular, hypocrateriform, of five petals united at base, or sometimes almost distinct.

STAMENS. Five, hypogynous and opposite the petals, or inserted on their claws.

OVARY. One-celled, free from the calyx. Styles five (seldom three or four).

FRUIT. A utricle, or dehiscent by valves.

SEED. Inverted.

THE SECONDARY CHARACTERS.

STATICE. *Calyx* infundibuliform, the limb entire, plaited, scarious. *Petals* five. *Stamens* five, inserted on the claws of the petals. *Style* five. *Prost* induriscient, invested with the persistent calyx.

Calyx one-seeded, entire, plaited, scarious, inferior. *Gynia* five-petalled. *Gynale* one-seeded, valvate, covered with the persistent calyx.

THE SPECIFIC CHARACTERS.

STATICE LIMONIUM. *Scape* terete, paniculate. *Leaves* all radical, ovate-lanceolate, undulate, smooth, obtuse, mucronate below the tip.

Scape terete. *Panicle* much branched. *Leaves* lance-obovate, obtuse, mucronate, glabrous.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER PENTAGYNIA. *Calyx* inferior. *Leaves* radical, smooth. *Ovary* one-seeded.

NATURAL HISTORY.

The STATICE LIMONIUM is a maritime, indigenous, perennial plant, and grows in the salt marshes, along the whole extent of the North American sea-coast. It rises about a foot in height, and blossoms in August and September; its flowers are blue and very conspicuous, on long spikes. *Scape* about a foot high, with several lanceolate clasping bracts, and supporting at the top a broad, branching panicle, composed of close secund spikes of sessile blue flowers. *Petals* obovate, unguiculate, bearing the stamens on their claws. *Leaves* lanceolate, broader in the upper half, smooth, veinless, on long petioles.

This plant is sometimes called *Sea Zareander*; though it has scarcely any resemblance, and none of its aromatic quality. It has a strong perennial woody root, large and ligurous, of a reddish color and an astringent taste; sending out many strong fibres, which strike deep into the ground: from the upper part of this come out several smooth, stiff leaves, of a pretty thick consistence and a dark or glaucous green, from four to five inches long, and more than two inches broad in the middle.

The stalk is naked, dividing into many branches, which are

subdivided into others, smaller towards the top; the latter are terminated by slender spikes of pale-blue flowers, ranged on one side the stalk, above each other, coming out of numerous covers like sheaths: these appear in summer, and are succeeded by oblong seeds, inclosed in the calyx.

The common name given to this plant, throughout the United States, that of *Rosemary*, belongs to a different shrub, the *ROSAMARINUS OFFICINALIS*, and should be particularly remembered. The true English name is *Thrift*.

The *STATICE LEMONIUM* appears to great advantage in a pot. It is much disposed to throw up new flowering stems; hence, by having several pots of it, some plants will be in flower throughout the summer. On this account especially, and for the singularity of its large blue calyx, it is a plant that merits attention.

Though, in a manner, a biennial, it may be often increased by parting its roots. Both the root and plant are inodorous. The plant varies much as to its luxuriance; being sometimes found with leaves scarcely an inch long, and not more than six or eight flowers in a panicle, and at other times much larger, with the flowers far more abundant. The light blue color distinguishes it at a distance; and that color is tolerably permanent. On the whole, though not so magnificent as some of its foreign species, it is nevertheless a beautiful plant.

The tender kinds of *STATICE LEMONIUM* grow in a sandy loam and peat; the others in light soil, and all are increased by dividing the root or by seeds.

Some botanists consider the *STATICE LEMONIUM* of Europe a mere variety of the *STATICE CAROLESIANA* of America. The leaves of the former are, however, undulated, while those of the latter are perfectly flat in the margin.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

From the result of the chemical analysis of *STATICE LEMONIUM*, it appears to contain tannin, gallic acid, gum, extractive, albumen, volatile oil, resin, camphor, coloring matter, lignin, and various salts, among which are common salt, and the sulphate of soda and magnesia. It results, also, from the same experiments, that it possesses properties similar to galls; since a like quantity of both makes ink equally black. Water and alcohol are both solvents of it; but the last is even stronger, and the cold effusion more powerful than the hot.

One of the most important and valuable uses to which the root of *STATICE TATARICA*, closely allied to the *Linonum*, is applied, is not very generally known. The plant grows exuberantly, on the shores and in the neighborhood of the Caspian Sea; and the Kalinuc Tartars, availing themselves of its abundance, apply the root in the process of tanning hides and skins, and which, on account of its powerful astringent qualities, produces the celebrated Russian leather.

The root is the official part; it is a most powerful vegetable styptic and astringent. In some parts of the United States, and particularly in New England generally, this plant is held in very high estimation, and much used for medical purposes. It is used in severe dysenteries, and the putrid sore-throat accompanying scarlet fever; and for these objects it should be taken in decoction, and also used as a gargle.

The decoction may be prepared by boiling four ounces of the root in four quarts of water down to two; strain the liquor and sweeten it with loaf-sugar: dose, a teacupful to be taken four times a day, for the cure of diarrhoea, dysentery, and gleet. It is necessary to give a dose of rhubarb or castor oil in cases of dysentery, &c. previous to using the decoction.

The root of this plant is already very generally introduced into practice; and it is particularly popular among the inhabitants along the sea-coast. It is especially beneficial in aphthæ, ulcers of the mouth and throat, debility, hæmorrhage, cynanche maligna, relaxed bowels, cholera infantum, chronic dysentery, &c.; and the good effects, in these cases, are very sensibly advanced, the root being also antiseptic. It has often prevailed when other astringents and tonics have been tried and failed.

An infusion of the root of this plant is much esteemed, and even supposed to be a kind of specific, as a gargle in mucous sore-throat or scarlatina anginosa. It has also been found highly useful as a wash or injection, in gonorrhœa, gleet, and immoderate flow of the menses. In dysentery, it should be used only after purgatives, and it will prove as near a specific in this complaint as any medicine can be. The best manner of giving this medicine, in this instance, is to boil it in milk (an ounce of the dried root to a pint of milk); a table-spoonful may be given every hour, in bad cases, and if blood is passing from the bowels, it may be given oftener.

The powder of the dried root may be sprinkled on any ill-conditioned sore, with good effect.

An essential oil is procured from this plant, by distillation, possessing all the beneficial properties of the plant. The dose is from ten grains to half a drachm.

The *STATICE LINONUM* is, hence, a valuable article in the *Materia Medica*; the taste is very styptic and rather bitter; it may, however, be made palatable by aromatics.



SV 4.

NASTURTIIUM OFFICINALE.

Water Cress



CRUCIFERÆ.

The Mustard Family.

No. 4.

NASTURTIIUM OFFICINALE.

WATER-CRESS.

Geog. Position. Europe, rivers and springs.

Quality. Acid.

Power. Diuretic, antiscorbutic.

Use. Scurvy, obstipation of the bowels. As a salad.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER CRUCIFERÆ.

Linnean Classification.

CLASS XV. *Tetradynamia.* ORDER *Siliquosæ.*

Arrangement. — Lin. Sp. Pl. 1088. Willd. Sp. Pl. 493. Persh. Flor. N. A. 446. Raf. Med. Floe. II. 49. Whittow, Med. Dic. 129. U. S. Disp. 1279. Loud. Encyc. Pl. 338. Galt. Med. Bot. 135. Gray, Bot. N. U. S. 22. Wood, Class. Book, 165.

GENUS NASTURTIIUM.

From the Latin, which, according to Flay, comes from *nassa* cress, from the effect which the acrimony of these plants has upon the nose. The English, from its growing in water, and *Cress* from the Lat. *cressa*, to increase.

Synonymæ. — *Cressa* de Fontaine (Fr.). *Brassica Kresse* (Ger.). *Cresson* de Saligny (It.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals four, deciduous.

COROLLA. Of four regular petals, their claws inserted into the receptacle, and their limbs spreading in the form of a cross.

STEMENS. Six, two of them upon opposite sides, shorter than the other four.

OVARY. Composed of two united carpels, with two parietal

placenta, united by a membranous dissepiment. *Sigmas* two.

FRUIT. A silique or silicle, usually two-celled.

SEEDS. Attached in a single row to each side of the placenta.

ABUSES WANTING. *Embryo* with the two cotyledons variously folded on the radicle.

THE SECONDARY CHARACTERS.

NASTURTIUM. *Sepals* equal at base, spreading. *Siliques* subterete, mostly curved upwards, sometimes short, so as to resemble a silicle. *Valves* veinless. *Seeds* in a double row. *Cotyledons* accumbent.

Siliques terete, abbreviated or deformed. *Stems* somewhat proclined. *Calyx* equal at the base, spreading. *Seeds* small, irregularly in two series, without margin.

THE SPECIFIC CHARACTERS.

NASTURTIUM OFFICINALE. *Leaves* pinnate. *Leaflets* ovate, subordinate, repand. *Petals* white, longer than the calyx. *Stems* decumbent, thick. *Branches* axillary.

Leaves pinnately divided. *Segments* ovate, subordinate, repand. *Petals* white, longer than the calyx.

THE ARTIFICIAL CHARACTERS.

CLASS TETRADYNAMELL. *Stamens* six, four of them longer than the other two. **ORDER Siliquosa.** *Petals* four, equal, emarginate. *Pod* two-celled by a false partition.

NATURAL HISTORY.

This class of plants is of much importance to man. It is found principally in the temperate zones, and furnishes several of the alimentary articles which are very nutritious, and others which are used as condiments.

Water-chess is a creeping amphibious perennial, growing in ponds and slow running streams. The stems are spreading, declining, or floating, if in water. The leaves are alternate, pinnate, and somewhat lyre-shaped. The flowers are white, in a corymb, soon lengthened out into a spike, and appear in June and July. The plant, when growing in a rapid current, has its leaves lengthened, and in this state is sometimes mistaken for the Water Parsnip (*Sium latifolium*), which commonly grows with it, and is deleterious.

The most suitable description of water is a clear stream, and not more than an inch and a half deep, running over sand, gravel, or chalk. Newly risen spring-water is highly advantageous, as the plants not only thrive better, but, in consequence of its being rarely frozen, they generally continue in vegetation, and sometimes throughout the whole winter. When the plants begin to grow, they soon check the current so as to raise the water two or three inches above the plants, which is considered the most favorable circumstance in which they can be placed. The *Curtis* will not grow freely in a muddy bottom, nor will it taste well when there is mud about the roots. It is absolutely necessary there should be a constant current, as where there is any obstruction to the stream or flow of water, the plants cease to thrive. After the plants have been cut about three times, they begin to stock, and then the oftener they are cut the better; in summer it is necessary to keep them very close cut. In winter the water should be rather deeper, to obtain which, the plants are left with more head that the water may thus be impeded.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

WATER-CRESSSES have always been esteemed valuable for their antiscorbutic qualities, and these properties are the uniform and universal character of the order of *Cruciferae*. *NASTURTIUM OFFICINALE* forms an excellent spring salad, either alone or with brook-line or scurvy-grass. It is a popular favorite in spring in most places, generally eaten fasting, and proves a good remedy to cleanse the blood of gross humors. It is also said to enliven the spirits.

The fresh herb has a quick, penetrating odor, especially when rubbed, and a bitterish pungent taste, but loses both when dried, and the infusion also in the dried state is perfectly inert. The plant is undoubtedly an excellent stomachic; and perhaps there is no better method of using it than as a salad.

WATER-CRESSSES open obstructions, increase the urinary discharge, promote the menses, and are a powerful remedy against the scurvy; they are also considerably diuretic and emmenagogue.

The juice of **WATER-CRESSSES** decocted with that of Scurvy-grass and Seville oranges, forms a very popular remedy in scorbutic affections and visceral obstructions. The decoction alone is an admirable cleansing wash for ulcers, sores, &c., and is also frequently employed for attenuating viscid humors.

Animalcules are the cause of various disorders. A variety of internal complaints in the stomach, lungs, liver, and intestines, are brought on by swallowing myriads of animalcules and other imperceptible living creatures which inhabit raw vegetables and foul water; and finding the heat and food of the stomach congenial to their growth, they become a new species of an alarming size, and prey upon the vital parts to the great detriment of the patient's health, and oftentimes at the expense of his life before the malady can be known or even suspected.

A friend of Leod Stawell (Esq.) had eaten voraciously of **WATER-CRESSSES**. Some time afterwards he complained of a continual sensation of pain at the pit of the stomach, which no medicine could remove. The advice of the most able physicians proved to no purpose, and consequently, for a time, his case was considered incurable. In this situation some strong emetics were administered, and he presently threw up an incredible number of small tadpoles, — which were evidently the production of spawn attached to the **WATER-CRESSSES**, eaten without care, and perhaps without washing. Afterwards he rapidly recovered, and in a very short time resumed his usual avocations.

An extraordinary case is stated of a young girl in Hampshire, about fourteen years of age, who experienced a most uncommon sensation in her stomach and bowels, and could plainly distinguish something alive and moving within her. The girl's description was for a long time treated as a chimera. At length, however, she brought up a living toad. This animal undoubtedly must have been taken into her stomach in that state of the spawn which is just emerging to tadpoles, and was attributed to her eating **WATER-CRESSSES**, which had long been a common food with her. Nothing would have saved her from poison, but the animal having been bred and nourished up as it were in her own body, and becoming so much assimilated with her nature as to have thus long proved harmless. It is certain, however, that had it not been thus timely brought away, she must very soon have died.

From these facts it is quite evident the utmost care should always be taken in the washing and cleansing of salads, **WATER-CRESSSES**, and all raw vegetables, and particularly in guarding against the long red worm, which almost constantly lies concealed in the very heart and centre of a head of celery. The same caution is necessary in eating all kinds of fruit, since they abound with animalcules and various living creatures. Cold raw water, particularly when stagnant, ought never to be drunk. It is always the safest way to boil the water before it is used in the composition of any kind of beverage, or even to drink alone.



Nº 3.
COPAIFERA OFFICINALIS.
Copaiva tree.





LEGUMINOSÆ.

The Pulse Family.

No. 5.

COPAIFERA OFFICINALIS.

COPAIBA-TREE.

Geog. Position. Brazil.

Quality. Acid, bitter, aromatic.

Power. Vulnerary, diuretic, purifying.

Use. Synocha, phthisis, hectic fever, cough, gonorrhœa, diarrhœa, scurvy.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER LEGUMINOSÆ.

Linnean Classification.

CLASS X. *Decidua*. ORDER *Monogymia*.

AUTHORITIES. — Lin. Sp. Pl. 557. Linn. Flœ. Med. 278. Willd. Sp. Pl. II. 420. Steudemann and Chambl. 156. Woodw. Med. Bot. 609. Barton, Lec. 117. No. 183. Lenz Encyc. Pl. 350. Lenz Disp. 861. U. S. Disp. 278. Griseb. Med. Bot. 261. Pers. Pl. Mar. Mod. II. 683. Kost. Mar. Mod. 219. Rostk. Fam. Pl. 613. Wood, Class. Bot., 217.

GENUS COPAIFERA.

This tree is so called from bearing the drug *Copaiba*, which is the name given to the tree itself by the people of Brazil.

SYNONYMS. — Baume de Copahu (Fr.), Kopaiba Balsam (Ger.), Resin Balsam (Swed.), Balsam Copayva (Dutch), Balsamo del Copahua (It.), Copayva (Sp.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals generally five, more or less united, often unequal.

COROLLA. Petals five, either papilionaceous or regular, perigynous.

STAMENS. Diadelphous, monadelphous, or distinct. *Anther* versatile.

OVARY. Superior, single and simple. Style and Stigma simple.

FRUIT. A legume, either continuous (one-celled), or (a few-seed) jointed into one-seeded cells.

SEEDS. Solitary or several, destitute of albumen.

THE SECONDARY CHARACTERS.

COPAIFERA. *Calyx* four-parted. *Segments* diverging, the lowest the narrowest. *Covolla* none. *Stamens* ten, declinate. *Ovary* roundish, compressed, with two ovules. *Fruit* pedicellate, oblique, obovate, rounded, compressed, between woody and leathery, two-valved, one-seeded. Seed inclosed in a one-sided aril.

Calyx with four sepals, united at base, obcordate. *Petal* also. *Stamens* ten, distinct, nearly equal. *Style* filiform. *Legume* two-valved, one-seeded.

THE SPECIFIC CHARACTERS.

COPAIFERA OFFICINALIS. Leaves generally equally pinnate. Leaflets in two-five pairs, incurved, ovate, unequal-sided, obtusely acuminate with pellucid dots.

Leaves alternate, large, pinnate. *Flowers* whitish, disposed in terminal branched spikes. *Fruit* an oval, two-valved pod, containing a single seed.

THE ARTIFICIAL CHARACTERS.

CLASS DECANDREA. *Stamens* ten. **ORDER MONOGYNIA.** *Fruit* a legume. *Ovary* single and simple.

NATURAL HISTORY.

The **COPAIBA-TREE** is a native of South America and the Spanish West India Islands. It grows in great plenty in the woods of Toln, near Carthagena, and in those of Quito and Brazil. It is a lofty, handsome tree, branching at the top, with a brownish, ash-colored bark. The leaves are large and pinnate; consisting of four pair of ovate, pointed, alternate, ferruginous leaflets, with a terminal one two or three inches long, entire, shining, veined, narrower on one side than on the other, and placed on short petioles. The flowers are in terminal racemes, which are stiff, spreading the length of the pinnæ, and loosely divided into eight alternate common peduncles, with the flowers, which are white, sitting closely on them. The petals are oblong, acute, concave, spreading. The filaments slender, incurved, bearing oblong, incumbent anthers. The germen is roundish, compressed, and on a short pedicel. The fruit is an oval, two-valved pod, con-

taining a single egg-shaped seed, enveloped with a bernial arillus.

Almost all the species of *Copaifera* yield balsam. The copaiba balsam of commerce is produced by wounding or boring the trees to the pith, near the base of the trunk, when it flows abundantly in the form of a clear, colorless liquid, which is thickened and acquires a yellowish color by age. The operation is performed two or three times in the same year, and from the older trees the best balsam is obtained. It is brought to market from the Brazil in small casks, each of which contains from one ewt. to one cwt. and a half of the balsam.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Genuine, good *Copaiba balsam* has a peculiar but agreeable odor, and a bitterish, hot, mucous taste. It is clear and transparent, its consistence is that of oil, the color a pale golden-yellow, and its specific gravity 0.950 to 0.966; but when it is exposed with an extended surface to the action of the air, it gradually thickens, until at length it becomes solid, dry, and brittle, like resin. It is insoluble in water, but is completely soluble in alcohol and ether. Sulphuric acid converts it into a brown, bituminous-like mixture, which gives out a strong odor of sulphur. Nitric acid, in the ordinary heat of the air, partially dissolves it, and renders it brown; but at an increased temperature, the action is violent, the acid is decomposed, and nitrous fumes are copiously emitted. The muriatic and acetic acids scarcely affect it. The pot-alkalies form with it white, saponaceous compounds, which are soluble in water, forming opaque, milky mixtures. It is soluble also in the expressed oils. Distilled with a gentle heat, 38 per cent. of a green, pleasantly odorous, sapid, volatile oil, of specific gravity 0.876, passes over, while 7.59 remains in the distilled water, and 53.66 of a brown resinous extract remains in the retort, which gradually hardens and becomes brittle, 52 parts of which are isodorous, insipid, and soluble in ether and alcohol, and 1.66 remain clammy; the remaining 0.75 is extractive. In destructive distillation, it yields some empyreumatic brownish-red oil, an acidulous water, carbonic acid gas, and odorous gas, but does not yield benzoic acid. Hence it approaches nearer in its nature to the turpentine than to the balsams. It is sometimes adulterated with mastic and oil, and occasionally with rape oil and with castor oil. Bucholz says, that if copaiba does not dissolve completely in a mixture of four parts of alcohol and one of rectified sulphuric ether, its adulteration may be inferred. The

adulteration with castor oil is discovered by mixing three parts of the suspected balsam with one part of sulphuric acid; if it be pure, a plastic, reddish mass will be formed; if it contain castor oil, the consistence is that of turpentine, and it is scarcely colored. If copaiba balsam be pure, it rapidly solidifies when mixed with calcined magnesia; if this be not effected, the balsam is impure, and contains a fixed oil.

Copaiba has been prescribed successfully as an expectorant in chronic catarrh, with the view of inspissating, rather than attenuating, the mucus of the bronchial tubes. If, as is probable, it stimulates directly the mucous membrane, the effect produced may arise from a *sear action* being induced upon the inflamed surface, in somewhat the same manner as occurs from its employment in gleet in the mucous membrane of the urethra; and it is only upon such a mode of action that the benefit which results from its administration in the advanced stages of phthisis can be accounted for. It may be given in the form of pills by rubbing it up in the proportion of two parts of copaiba with one part of the carbonate of magnesia, and leaving the mixture for some time at rest until it becomes solid; if the copaiba be pure, the mass remains diaphanous.

COPAIBA BALSAM is stimulant, diuretic, and gently purgative. It has been recommended in pulmonary complaints; but where the excitement is morbidly increased, or there is any degree of the inflammatory diathesis present, the heating and irritating quality of copaiba renders it injurious. From its power of stimulating the urethra, it is most successfully used in gleet. It is equally efficacious in *fluor albus*, and in that state of the uterus sometimes occurring on the final cessation of the menses, which is accompanied with a various discharge, great bearing down, and many of the symptoms of incipient cancer. It certainly affords considerable relief in hemorrhoidal affections, perhaps from its exciting the steady peristaltic motions of the intestines, at the same time that the determination of the blood to the hemorrhoidal vessels is lessened by the stimulant effect of the remedy on the kidneys. In too large doses, it excites inflammation of the kidneys, and its use should always be avoided when elevation of these organs is suspected.

The extract remaining after distillation by a gentle heat has been recommended by M. Thom, as acting as efficaciously in gonorrhoea and gleet as the balsam, without its nauseating properties.

The dose of copaiba is from twenty to thirty minims, twice or thrice a day, either triturated with sugar into an *elco saccharum*, or mixed with soft or distilled water, by means of mucilage or the yolk of an egg. The dose of the volatile oil is twenty minims; that of the extract, ten grains.





Nº 6
CANELLA ALBA
White canella. Wild cinnamon.



Adiantum
Adiantum

MELIACEÆ.

The Bead-tree Family. *

No. 6.

CANELLA ALBA.

WHITE CANELLA. Wild Cinnamon.

Geog. Position. West Indies.

Quality. Aromatic, bitter, pungent.

Power. Stimulant, tonic.

Use. Dyspepsia, goit, scurvy.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER MELIACEÆ.

Linnean Classification.

CLASS XI. *Dodecandria*. ORDER *Monogynia*.

AUTHORITIES.—*Linn. Sp. Pl.* 636. *Lond. Encycl. Med.* 116. *Willd. Sp. Pl.* II. 827. *Simpson and Churchill*, 66. *Woodv. Med. Bot.* 694. *Barton, Loc.* 55, No. 131. *Lond. Encycl. Pl.* 894. *Lond. Disp.* 229. *U. S. Disp.* 158. *Goss. Med. Bot.* 181. *Fiori, El. Mat. Med.*, II. 654. *Koen, Mat. Med.* 441.

GENUS CANELLA.

A name given by Mearns, in account of the resemblance between its wood and the aromatic bark of *Cassia Cinnamon*.

SYNONYMES.—*Cassia blanda* (E.), *Walnut Zinnat* (Ger.), *Heil Kane* (Swed.), *Cassia blanda* (L.), *Cassia blanda* (Sp.).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three—five, somewhat united at base.

COROLLA. *Petals* three—five, hypogynous, covering at base, sometimes unequal, aestivation imbricated.

STAMENS. Of the same number as, or double the number of, the petals, monadelphous at base, inserted on the outside of the torus. *Astheres* sessile, within the ring of filaments.

OVARY. Three—five-celled, each cell containing one to two ovules. *Style* and *stigma* usually united into one, three—five-lobed.

FRUIT. Drupaceous, baccate, or capsular, three- or five-celled, each one- or two-seeded, when dehiscent, loculicidal.

SEEDS. Never winged or flat. *Albumen* scanty or none.

THE SECONDARY CHARACTERS.

CANELLA. *Sepals* five. *Petals* five, somewhat coriaceous, glaucous, twisted in aestivation. *Stamens* combined in a tube. *Anthere* fifteen, resembling furrows. *Stigma* three. *Berry* three-celled, or by abortion sometimes one-celled. *Cells* one- or two-seeded. *Embryo* surrounded by fleshy albumen, curved, with linear cotyledons.

Sepals five. *Petals* five, sometimes coriaceous, sometimes cartilaginous. *Stamens* fifteen, connected with filices removed anthers. *Stigma* three. *Berry* three-celled (or by abortion one). *Cells* one- or two-seeded.

THE SPECIFIC CHARACTERS.

CANELLA ALBA. *Leaves* scattered, shining, obovate, cuneate at base, dotted when young, opaque when old. *Flowers* small, clustered. *Petals* concave, erect, thick, deciduous. *Berry* the size of a pea, fleshy, smooth. *Seeds* generally two.

Flowers in terminal corymbs. *Leaves* coriaceous, spatulate, and obtuse.

THE ARTIFICIAL CHARACTERS.

CLASS DODECANDREA. *Stamens* twelve to nineteen. **ORDER MONOCYCLA.** Polypetalous. *Calyx* three-lobed. *Anthere* adhering to an uncelate nectary. *Berry* one-celled.

NATURAL HISTORY.

The name **CANELLA**, a diminutive of *Cassa*, was at one time applied to the Cinnamon, whence the French so called it. When the present *Canella* was first discovered in South America, it was supposed to be the true Cinnamon, and called by its then name. One of the earliest full, though perhaps not the first account, was given by **MONARDUS** (*Ciss. Exot.* 323), who states that, in 1540, an expedition was sent by **Pizarro** to examine the province *Camato*, where this Cinnamon was said to be found. It was long confounded with *Winter's Bark*, and at one time called *Winter's Canella*, or *Spurious Winter's Bark*, though both had been clearly distinguished by **Sir Hans Sloane** in *Phil. Trans.*

CANELLA ALBA is a tree which is a native and common in

many parts of the West India Islands and in South America, growing frequently on the sea-coasts, where it seldom exceeds twelve or fifteen feet; but in the inland forests, it attains a more considerable height. It is propagated chiefly by wild pigeons feeding on its berries. It rises with a very straight stem, and resembles the Pimento. The branches are erect, not spreading, and only at the top of the tree, furnished with petiolated leaves irregularly alternate, oblong, entire, serraeless, of a dark green color, thick and shining like those of the Laurel, and emitting a similar odor. The flowers, which exhale a powerful aromatic perfume, are small and of a violet color, seldom opening, and grow in clusters upon divided footstalks at the summits of the branches. The calyx is of one piece, small, persistent, and deeply tripartite. The petals are five times as long as the calyx, oblong, sessile, concave, erect, two a little narrower than the others. The nectary is pitcher-shaped, antheriferous, and deciduous. The anthers are twenty-one in number, distinct, fixed longitudinally to the outside of the nectary, and discharge a yellow pollen. The germen is superior, ovate. The style is cylindrical, with two rough, convex, blunt stigmas. The fruit is an oblong, one-celled, glossy black berry. The bark is whitish, so that the tree is at once and easily distinguished from others in the woods.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The bark of the CANELLA ALBA is the only official part, and is removed with an iron instrument, and, being deprived of its epidermis, is dried in the dark. It is brought to market packed in casks and cases, in long pieces, some rolled in quills and others flat; the quilled sort is considerably thicker than cinnamon, and the flat nearly one fourth of an inch in thickness. The quilled pieces are of a whitish-yellow color on both sides, and break with a starchy fracture. The flat pieces, which appear to be the bark of the largest branches or of the stem, are yellow on the outside and pale brown within.

The odor of both kinds, when fresh broken, is aromatic, something like a mixture of cloves and cinnamon, and the taste slightly bitter, extremely warm, and pungent. Although boiling water takes up nearly one fourth of the weight of the bark, yet the infusion possesses but little of its warmth and pungency, the bitter chiefly predominating. Alcohol extracts all its qualities in perfection; the tincture is bright yellow, and becomes milky on the addition of water. The infusion is

not altered by the infusion of galls, sulphate of iron, zinc, muriate of mercury, or tartarized antimony; but nitrate of silver and acetate of lead render it milky, and throw down precipitates. By distillation with water *CANELLA ALBA* affords a thick, heavy, yellow, very pungent, gratefully odorous essential oil, on which and a little bitter resinous matter its virtues seem to depend.

An analysis of it by *PERRON* and *ROZNER* shows that it contains volatile oil, resin, bitter extractive, canellin, gum, &c. The canellin is a saccharine substance, which will not undergo the vinous fermentation, and is very analogous to, if not identical with, mannite. It may be distinguished from *Winter's Bark* by not being precipitated by nitrate of baryta, nor by infusion of galls, nor by sulphate of iron, as it does not contain tannin.

The bark of *CANELLA ALBA* is stimulant and slightly tonic. It is useful in some cases of dyspepsia and atonic gout, and it is also recommended in scurvy. On account of its aromatic qualities, however, Canella is principally employed to cover the taste of several disagreeable-tasted articles of the *Materia Medica*, and enters into the composition of a well-known and popular purgative, the *Hiern Picra*, and is added to the tincture or infusion of senna: it covers the nauseous taste of these articles, renders them more grateful to the stomach, and prevents them from griping. It is seldom used alone, though from its stimulating and aromatic properties it might be useful where remedies of this character were indicated. It appears more useful as a condiment than as a medicine. By the Caribs (the ancient natives of the Antilles, and the negroes of the West Indies) it is so employed.

The dose of the powdered bark is from ten grains to half a drachm.

The official preparations are, —

TINCTURA GENTIANÆ COMPOSITA. Compound tincture of Gentian, commonly called Stomachic Tincture.

Take of yellow-gentian root, sliced and bruised, two ounces; orange-peel, dried and bruised, one ounce; *Canella alba*, bruised, half an ounce; cochineal, in powder, half a drachm; proof spirit, two pints and a half. Digest for seven days, and filter through paper. This is an elegant stomachic bitter and cordial.

VINUM ALOES. Wine of Aloes.

Take of extract of spiked aloes, eight ounces; canella bark two ounces; proof spirit and distilled water, each, four pints. Rub the extract to powder with white sand, previously freed from impurities; rub the canella bark also into powder, and on these mixed together pour the water and spirits. Macerate for fourteen days, frequently shaking the vessel containing the mixture, and afterwards strain.



Nº 2

BALSANODENDRON MYRRHA.

Myrrh.



TEREBINTHACEÆ.

The Terebinth Family.

No. 7.

BALSAMODENDRON MYRRHA.

MYRRH.

Geog. Position. Abyssinia and the eastern coast of Arabia.

Quality. Fragrant, bitter.

Power. Balsamic, tonic, stimulating.

Use. Asthma, catarrh, phthisis, debility.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER TEREBINTHACEÆ.

Linnean Classification.

CLASS VIII. Octandria. ORDER Monogynia.

Authorities.—Lind. Fl. Med. 170. Baron, Lec. 212, No. 373. Lond. Disp. 433. U. S. Disp. 474. Græf. Med. Bot. 171. Persoon, Ed. Mat. Med., II. 412. Kist. Mat. Med. 346. DC. Prodr., II. 76.

GENUS BALSAMODENDRON.

From Latin *Balsamum*, Greek *Balsamon*.

Synonymes.—Myrrhe (Fr.), Myrrhe (Ger.), Myrra (It.), Myra (Sp.), Myrra (Rus.), Myrr (Arab.), Bol. (Hind.), Boora-bol (Dak.), Vola (Siam), Valatpolum (Tun.), Massou-lebak (Malay), Mada (Jav.).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three to five, more or less united at the base, imbricated in aestivation, very rarely adherent to the ovary.

COROLLA. *Petals* rarely none, generally distinct, as many as and alternate with the sepals, very seldom united at the base, imbricated in aestivation.

STAMENS, as well as the petals, arising from the lower part of the calyx, or from the calycine disc, rarely from the tube surrounding the ovary; either equal in number to and al-

ternate with the petals, or double (very rarely quadruple) the number of the petals, and then placed alternately before and between them.

OVARY. *Carpels* in some, numerous, distinct, with one style, in others many, united by the ovaries; in either case some of them are frequently abortive, and hence the carpels in many appear solitary, one-celled; but the number of the styles and stigmas then usually indicates abortion.

FRUIT capsular or drupaceous.

SEEDS few, usually solitary, commonly exalbuminous. *Embryo* straight, curved, arched or folded back. *Cotyledons* various. *Rasicle* usually superior.

THE SECONDARY CHARACTERS.

BALSAMODENDRON. *Flowers* irregular. *Calyx* four-toothed, persistent. *Petals* four, linear, oblong, insertion induplicate, valvate. *Stamens* eight, inserted under the annular disc; elevated warts between the stamens. *Ovary* one. *Style* one, short, obtuse. *Berry* or *drupe* ovate, acute, with four sutures, one- or two-celled. *Cells* one-celled. *Leaves* pinnated. *Leaflets* three to five, sessile, without dots.

THE SPECIFIC CHARACTERS.

BALSAMODENDRON MYRRHA. *Branches* squarrose, spinouscent. *Leaves* on short stalks, ternate. *Leaflets* obovate, obtuse, obtusely toothed at the apex, the lateral smooth. *Flowers* unknown. *Fruit* ovate, sessile, smooth, brown, somewhat larger than a pea, surrounded at the base by a four-toothed calyx, and supported on a very short stalk.

THE ARTIFICIAL CHARACTERS.

CLASS OCTANDRIA. *Stamens* eight. **ORDER MONOCOSIA,** polypetalous. *Shrub* shrubby, arborescent. *Oriental tree* giving out balsam.

NATURAL HISTORY.

The history of Myrrh dates from great antiquity; it was known to all the older nations of the earth. The earliest notice of myrrh occurs in the Old Testament (Genesis xxxvi. 35), from which it appears that this gum-resin was an object of commerce with the Eastern nations more than 3,500 years

ago. It remained long, however, undescribed by naturalists; and the conjectures of Mr. Bruce in favor of its being a *Mimosa* were by no means satisfactory. At length this plant has been figured and described by Nees von Esenbeck in his great work, *Beschr. Öfler. Pflanz.*, by the name *BALSAMODENDRON MYRRHA*. He obtained his information and specimen from Ehrenberg, who met with it on the borders of Arabia Felix, and procured the true *Myrra* from the plant. According to him, the substance exudes from the bark of the tree, at first soft and oily, and of a yellow color, but becoming hard and dark-colored by exposure. It softens in the mouth, adheres to the teeth when chewed, and is in small, irregularly shaped pieces, which can scarcely be called tears; they are translucent, of a reddish-yellow color, brittle, breaking with a resinous fracture, and easily pulverized.

The plant is termed *BALSAMODENDRON MYRRHA* by Ehrenberg, who discovered it in 1820, at Beit el Fakip, near Gison, on the borders of Arabia Felix. Professor Lindley describes it under the name of *Psoralea Katar*, but there are doubts as to its identity with the *Balsamedendron Katar* of Knuth. It is a low shrub, with spiny branches and ternate leaves, with the terminal leaflet large. The fruit is globular, with a drawn-out point.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Myrra is tonic and expectorant. In moderate doses it stimulates the stomach, promoting the appetite and digestion; but in larger doses increases the frequency of the pulse, and augments the general heat of the body. As a tonic, it is efficaciously given in cases of debility, as amenorrhoea, chlorosis, and convalescences, and in phthisis pulmonalis, when the inflammatory symptoms and hectic fever do not run high. Its use in phthisis has indeed been condemned by some physicians of character, but when there is an evident ulceration of the lungs, without much hectic, and the patient's strength is considerably reduced by the quantity of the expectorated matter, the proper exhibition of myrrh is certainly productive of much benefit. In the first-mentioned diseases, it is advantageously combined with aloes, cinchona, or other bitters and chalybeates; and in phthisis, with nitre, digitalis, opium, camphor, and the sulphate of iron or of zinc. Combined with oxide of zinc, it has been found extremely useful in the peculiar cough which sometimes accompanies pregnancy and continues after abortion. As an expectorant, it is often sin-

ployed in humoral asthma and chronic catarrh, and with the same view also has been given in phthisical affections; but as it cannot be employed with propriety in pulmonary cases, where there is much inflammatory action or hectic present, any advantage derived from its use in phthisis probably depends altogether on its tonic operation counteracting the exhaustion which is produced by a copious purulent expectoration. As a local stimulant, the alcoholic solution of myrrh diffused in water is used as a lotion in a spongy state of the gums, and for correcting the fetid discharge of vitiated ulcers, particularly when connected with caries of the bone; and also as a gargle in erysipelas maligna.

Myrrh, as found in the shops, is in small fragments, called tears, or in masses composed of agglutinated portions, of various shades of color. It is partially soluble in water, alcohol, and ether. In distillation with water, it yields an oil heavier than water. When it is triturated with very soft or distilled water, nearly the whole appears to be dissolved, forming an opaque yellowish solution; but the greater part is deposited by rest, and not more than one third of the gum-resin is actually dissolved. The alcoholic tincture is rendered milky and opaque when mixed with water, but no precipitate appears. It has been often analyzed, the latest examination of it being by Braudes, who operated on specimens collected by Elmberg and Hempel; in these he found volatile oil, about one fourth of resin, one half of gum, and several salts. The resin consisted of two kinds, one hard, in small proportions, and which presented some of the properties of an acid, the other soft, and probably a mixture of resin and volatile oil.

Myrrh is administered in substance, or in the form of watery infusion, or of tincture properly diluted. The watery infusion is much less stimulant than any of the other preparations. A watery extract is sometimes preferred by many physicians, from an idea that it is less heating than the gum-resin; but it is equally bitter, and is perhaps not different from a diminished dose of the myrrh. When given internally in substance, the dose is from ten to thirty grains, either in powder, or suspended in water. It is seldom given alone, being generally combined with the chalybeates, or with aloe, or some of the fetid gums.

Myrrh was used for various purposes by the ancients. According to Plutarch, in his *Dissertation de Luc et Otre*, it enters into the composition of the famous *Zelus*, which, it is stated, inflamed every night to the setting sun, in the temple of Vulcan, at Memphis. Its medicinal use, both externally and internally, is mentioned by Celsus and other early authors; and the *Vedious*, the native practitioners of India, order it as a conial, and externally, mixed with lime-juice, as a repellent.



Nº 8

ES. C. BALANSTRE ARBUSTIVA.

Camphor.



DIPTERACEÆ.

The Camphor-tree Family.

No. 8.

DRYOBALANOPS AROMATICA.

CAMPOR.

Geog. Position. Sumatra and Borneo.

Quality. Aromatic, fragrant.

Power. Narcotic, diaphoretic, sedative, cooling.

Use. Keeping off contagion, fevers, rheumatism, lousiness, eruptions.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER DIPTERACEÆ.

Linnean Classification.

CLASS XVI. Monadelphic. Order Monogynic.

Authorities.—Lind. *Flor. Med.* 148. Willd. *Sp. Pl.* II. 474. Stephenson and Churchill, 129. *Woodw. Med. Bot.* 591. Barton, *Lect.* 126. Nic. 333. *Land. Encyc.* IV. 234. *Land. Disp.* 326. U. S. *Disp.* 129. *Offic. Med. Mat.* 347. *Perron, El. Mat. Med.* II. 442. *Rail. Mat. Med.* 311. *Reich, Fern. Pl.* 634.

GENUS DRYOBALANOPS.

From the Greek, and established by Gaertner.

Synonymy.—*Campora* (P.), *Der Kampfer* (Ger.), *Camfira* (It.), *Alindir* (Sp.), *Cakor* (Arab.), *Campouran* (Tam.), *Cambara* (Ses.), *Kahar* (Hib.).

THE ESSENTIAL CHARACTERS.

CALYX. Tubular, five-lobed, unequal, persistent, and afterwards enlarged at base, aestivation imbricated.

COROLLA. *Petals* hypogynous, sessile, often united at base, with a valvate aestivation.

STAMENS. Hypogynous, indefinite, distinct or somewhat and irregularly polyadelphous. *Anther* inerte, subulate, with a longitudinal dehiscence near the apex. *Filaments* dilated at base.

OVARY. Superior, three-celled. *Ovules* in pairs, pendulous. *Style* single. *Stigma* simple.

FRUIT. Coriaceous, one-celled by abortion, three-valved, or indehiscent, surrounded by the calyx, which has tough, leafy, enlarged divisions, crowning the fruit.
SEEDS. Single, with no albumen.

THE SECONDARY CHARACTERS.

DEYOBALANOPS. Calyx leathery, five-parted. *Segments* equal. *Petals* convoluted in aestivation. *Stamens* numerous, their filaments consolidated in two rows into a cylindrical fleshy tube, longer than the ovary. *Anthex* almost sessile on the tube, linear, mucronate. *Ovary* superior, three-celled. *Ovules* two in each cell, pendulous. *Style* filiform. *Stigma* obscurely three-lobed, papillose. *Calyx* of the fruit cup-shaped, with the foliaceous permanent divisions equal, distant, and much shorter than the three-valved nut.

Calyx five-veined. *Spine* long, ligulate, sessile, united at base. *Glands* five-pentad. *Fruit* three-valved, one-celled. *Seed* solitary. *Endosperm* thickened, without a perisperm.

THE SPECIFIC CHARACTERS.

DEYOBALANOPS AROMATICA. *Leaves* opposite or alternate, elliptical, obtusely pointed, entire, smooth, reticulated, on short petioles, with raducous stipules in pairs. *Flowers* terminal and axillary.

Leaves elliptical, alternate, and opposite, stipulate. *Flowers* terminal and axillary.

THE ARTIFICIAL CHARACTERS.

CLASS MONAPLURIA. *Stamens* united by their filaments into one set. **ORDER MONOGYNIA.** *Calyx* imbricate in aestivation. *Trees* large-sized, branched.

NATURAL HISTORY.

This tree, the only one of the genus, is a native of, and found in great abundance in, the forests of Borneo and Sumatra, inhabiting the plains on the northwest coast of the latter island, and constituting a conspicuous occupant of them. It is said to flower but once in three or four years, and is limited to those localities between the third degree north and the equator. It furnishes the kind of camphor known as *Siamita* or *Malaya*, which exists in concrete masses, in longitudinal fissures or cavities, in the heart of the tree. This particular camphor is far more highly esteemed in

the East, but as it is found only in a limited district in Borneo and in Sumatra, and as the difficulty of obtaining the produce is great, the price is very exorbitant, being seventy-eight times that of the Japan or common camphor, though its medical virtues are the same as those of the commercial kind. The cavities from which this camphor is obtained are a foot or more in length in the tree. To obtain it, the trees are felled, and the camphor dug out; a single tree yields about twenty pounds. The young trees also yield a volatile oil, which is called *Oil of Camphor*, and is highly fragrant. From the position of this oil, its occurrence only in the younger trees, or in the older in connection with the camphor, which appears to be deposited from it, its composition, and finally its artificial conversion into camphor, it is regarded correctly as the basis of camphor. Its composition is $C_{10}H_{16}$, or isomeric with *Oil of Turpentine*; hence it is a true camphene. The wood is impregnated with this oil; hence its value for its protection from insects. Sumatra camphor differs from the ordinary article in the large size and flattened form of the crystals, its odor and ready reduction to powder. It is not as volatile. Crawford states that this camphor is in request among the Persians, Hindus, and Chinese, who pay an exorbitant price for it. It is seldom brought to this country. The medical virtues are the same as those of the commercial kind.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Camphor is stimulant, narcotic, and diaphoretic; but its stimulant powers are very transitory, and followed by sedative effects. It acts chiefly on the nervous system, and, like sulphur, it transudes through the skin, and is exhaled by the lungs. The Arabians appear to have first used camphor as a medicine, and by them it was regarded as refrigerant; an opinion which, in more recent times, has been the subject of much controversy. In moderate doses it operates as a cordial, increasing the heat of the body, and is exhilarating, besides softening and rendering the pulse fuller, and promoting diaphoresis; in larger doses it allays irritation and spasm, abates pain, and induces sleep; but in immoderate doses, camphor produces vomiting, vertigo, delirium, convulsions, and other deleterious effects.

As a stimulant, camphor is beneficially used in all fevers of the typhoid kind, cyanotic maligna, malignant measles, confluent small-pox, and as an adjunct to bark and opium to check the progress of gangrene, and in spasmodic affections,

as hysteria, epilepsy, chorea, asthma, and painful menstruation. Its narcotic and anodyne effects being produced with very little increase of pulse, it has been successfully employed for allaying pain and irritation, even in some inflammatory diseases, as pneumonia, acute rheumatism, gonorrhoea, small-pox when attended with convulsions, gout, and in the delirium of infants, and inflammatory fevers. But in these cases its use should be preceded by evacuations, and the remedy itself combined with nitre or antimonials, and in maniacal cases with opium. Camphor is also given internally, to obviate the irritating effects of some other medicines, as mercury, castor-oil, the saline preparations of mercury and drastic purgatives; also to correct the nauseating property and prevent the irritation which squill is apt to produce on the coats of the bladder.

Camphor may be administered in the solid form, but as in this state it is apt to occasion nausea, it is generally ordered in a state of minute division, suspended in fluids by means of mucilage or the yolk of eggs; sometimes by magnesia, which, assisting its division, and rendering it smooth as starch, admits of its combination with acids; and as several of the gum-resins, when saturated with it, form a soft, uniform, soluble mass, they also may be employed for diffusing it in water. It may be advantageously united with ammonia, aromatics, opium, bark, and other tonics, in low fevers and diseases of debility; with calomel, antimonials, digitalis, and neutral salts, in inflammatory diseases; with the fetid gums and other narcotics, in spasms and convulsive affections; and with squill and ipecacuanha, in pulmonary complaints.

As a local anodyne, camphor is used in frictions, dissolved in oils, alcohol or acetic acid, for allaying rheumatic and muscular pains; and with the addition of laudanum, it has been found of great efficacy when rubbed on the abdomen in flatulent cholera, dysentery, and inflammations of the viscera. In collyria it is useful in ophthalmia; and dissolved in oil, as an injection, in ardor urinae; and as an enema in the tenesmus occasioned by vermin, or other irritations of the rectum. A pill of camphor and opium, or a solution of camphor in oil of turpentine, put into the hollow of a carious tooth, affords almost immediate relief in toothache. Twenty or thirty grains of camphor, added to a common poultice, and applied to the perineum, allay chordee in gonorrhoea.

The dose of camphor is from five to ten grains; but to meet various indications, it may be diminished to a single grain, or extended to a scruple. It may be rubbed up with mucilage and almond emulsion, so as to suspend it in water; and this form is preferable to that of pills or bolus. The bad effects of an over-dose are commonly most effectually obviated by opium.





Nº 9

HELLEBORUS NIGER

Black Hellebore Christened Rose





RANUNCULACEÆ.

The Crowfoot Family.

No. 9.

HELLEBORUS NIGER.

BLACK HELLEBORE. *Christmas Rose.*

Geog. Position. Europe, Alps.

Quality. Acid, bitter.

Power. Purgive, emmenagogue.

Use. Hypochondriasis, melancholy, chlorosis.

BOTANICAL ANALYSIS.

Natural Classification.

OTHER RANUNCULACEÆ.

Linnean Classification.

CLASS XIII. *Polyandria.* ORDER *Polygynia.*

ARTHOGRAPHIA. — Lin. Sp. Pl. 782. Willd. Sp. Pl. II. 1223. Woods. Med. Bot. 472. Lindl. Flus. Med. 6. Rarum. Lec. 162. No. 299. Raf. Med. Flor. II. 227. Whittw. Med. Use. 118. Lond. Disp. 368. U. S. Disp. 365. Ec. Disp. U. S. 205. Eaton, Bot. 67. Lond. Encyc. IV. 488. Ballard and Garrod, Mat. Med. 182. Thomson, Mat. Med. 1073. Pereira, El. Mat. Med. II. 546. Geoff. Med. Bot. 82. Casson, Rhon. Med. Bot. I. 8. Gouy's Bot. N. U. S. 12. Benth, Fam. Pl. 637. Wood, Class Book, 144.

GENUS HELLEBORUS.

From the Greek *helle*, to cause death, and *bore*, food, on account of its poisonous qualities.

Synonymes. — Hellebore (Fr.), Schwarte Nieswurz (Ger.), Smart Prickat (Swed.), Elletre negro (It.), Hellebore negro (Sp.), Kalapogonion (Turk.), Khebekiya (Pers.), Kili Koshia (Hind.), Kharbo asred (Arab.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals mostly five, sometimes three-four, or six, mostly deciduous, and imbricated in aestivation.

COROLLA. Petals three-fifteen, sometimes none, hypogynous.

STAMENS. Indefinite, numerous, distinct, hypogynous. Anthers adnate or innate.

OVARY. Numerous, rarely solitary or few, seated on the torus.

FRUIT. Either dry achenia, baccate, or follicular.

SEEDS. Albuminous when solitary, either erect or pendulous.

Embryo minute, at the base of horny or fleshy albumen.

THE SECONDARY CHARACTERS.

HELLEBORUS. *Sepals* five, mostly greenish, persistent. *Petals* eight-ten, very short, tubular, two-lipped. *Stamens* numerous. *Stigmas* three-ten, orbicular. *Follicles* clustering at base, many-seeded.

Fronds five or more. *Nectary* two-lipped, tubular. *Gynels* five or six, many-seeded, erectish, compressed.

THE SPECIFIC CHARACTERS.

HELLEBORUS NOER. *Stem* almost naked, with one or two flowers. *Leaves* petiole. *Flowers* large, nodding.

Leaves radical, petiole. *Stems* radical, one- or two-flowered. *Roots* erect.

THE ARTIFICIAL CHARACTERS.

CLASS POLYANDRIA. *Stamens* twenty or more, arising from the receptacle. (*Hypogynous*.) **ORDER POLYGYNIA.** *Leaves* never petiole. *Herbs* with acid, colorless juice.

NATURAL HISTORY.

HELLEBORUS NOER is a native of the Alps, Austria, and Italy, and was unknown to the gardens in Europe till cultivated in 1595. Under favorable circumstances and in mild seasons, the flowers appear from December to March, and hence the plant is sometimes called Christmas Rose. Black Hellebore is so named from the dark color of the root, which is perennial, transverse, rough, knotted, externally black, internally whitish, and sends off many descending fibres. The leaves, which are deep green, spring immediately from the root, on long maculated petioles, and are composed generally of five leaflets, petiole, two being supported on one partial petiole on each side, and one terminal; the leaflets are ovate-lanceolate, smooth, shining, and coriaceous, with the upper half of each sparsely serrated. The flower-stalks are scapes, six or eight inches long, erect, round, somewhat tapering, sheathed, variegated with red, and bearing one or two flowers. The floral leaves supply the place of a calyx, are oval and indented at the apex. The corolla consists of five large, roundish, concave, spreading petals, at first white, with a tint of red, deepened by age, but finally changing to green, after the pollen is shed and the seed impregnated. The nectaries are greenish-yellow, tubular, two-lipped, the upper lip longer and slightly emarginate, the lower finely notched. The fila-

ments are numerous and thread-like, with yellow anthers. The germens, which vary from four to eight, become beaked pods, containing many oval, black, shining seeds.

HELLEBORUS NIGER has long been supposed to be the *ἑλεβορος μέγας* of Hippocrates; but there is every reason for agreeing with Willdenow, that his fifth species, *Helleborus orientalis*, the *officinalis* of Dr. Sibthorp, is the drug of the ancients. It was found by Bellonius and Tournefort growing in plenty about Mount Olympus and the island Antiochia, which was formerly celebrated for its production. Sometimes the roots of *Helleborus viridis*, *Adonis vernalis*, and several others, are either ignorantly or fraudulently substituted for those of Black Hellebore; a mistake or fraud of the utmost importance to detect, as they possess properties widely different, and some of them are so very active, that mischievous consequences have been the result of exhibiting them. They are, however, distinguished chiefly by their color being paler than the roots of the Black Hellebore. If any arguments were required to evince the necessity of botanical accuracy in discriminating medicinal plants, the *HELLEBORUS NIGER* would furnish many facts from which such arguments might be deduced. Many instances are recorded of the effects of this plant, by which it since appears that other plants were mistaken for it, and actually employed. It is not surprising, therefore, that the medical history of this root is not only confused and contradictory, but is calculated to produce very mischievous consequences.

HELLEBORUS NIGER, like most Alpine plants, loves a pure air, a situation moderately moist, and a soil manured. The plant is of common culture, and requires no extraordinary care or nicety. The flowers are sometimes injured by frost, but in order to preserve them in beauty, the plants should be covered during winter with hand glasses, or preserved in pots in a common hot-bed frame.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The fibres of the roots of *HELLEBORUS NIGER* are the parts principally used in medicine. They are about the thickness of a straw, from four inches to a foot in length, corrugated, of a deep brown black color on the outside, and internally white or yellowish. They have an unpleasant odor, and a rancous, bitterish, acrid taste, benumbing the tongue, causing a sensa-

tion of heat, and leaving upon it an impression "as when it hath been a little burnt with eating or supping any thing a little too hot." The acrimony is much impaired by keeping, and appears to depend on a volatile matter, as water distilled from the root has an acid taste. Both alcohol and water extract its medicinal properties, and as the spirituous preparation is the most active, these appear to depend on its resinous part. By coction with water it yields a very considerable portion of gummy matter and some resin. The effects of this extract are those of a drastic purgative, and the emmenagogue power which has been attributed to it seems to depend on its action as a purgative. It has been advantageously given in chronic diseases of the skin. To prepare this extract, take of the bruised root of Black Hellebore, a pound; boiling water, a gallon; macerate for twenty-four hours, then boil down to *four pints*; strain the liquor while it is hot, and evaporate to a proper consistence.

From the chemical analysis of *HELLEBORUS NIGER*, it appears to contain a volatile oil, an acid principle, and gum.

When Black Hellebore is taken into the stomach in large doses, or applied externally to wounds, its effects are very sudden and violent; but in the latter case the symptoms are most distressing. It occasions violent vomiting and purging attended with griping and cold sweats, considerable derangement of the nervous system, and if it continue long in the alimentary canal, it becomes inflamed. These symptoms may in a great measure be prevented by giving diluent emetics and laxatives at the commencement; but if any inflammation should succeed, the treatment must be antiphlogistic. In smaller doses it acts as an alterative, and is frequently employed for attenuating viscid humours, promoting the uterine and urinary discharges, and opening inveterate obstructions of the remoter glands.

This medicine has been much celebrated in dropsy, scabies, and worms, but it does not appear to possess any particular advantage over other resinous purgatives, and which act with less violence. It was formerly also in high repute as a cure for mania, melancholia, &c.

In some parts of Europe, the country people use an infusion or decoction of the leaves or root of this plant to destroy worms in children; but cloves, or some other warm spice, should be always joined with it to render its use more safe.

If Black Hellebore is employed at all, it must be with great caution, as it is difficult to know the exact strength of it. It is, under any circumstances, very drastic in its operation; therefore, whilst there are in our possession remedies of equal efficacy, greater safety, and such as can be depended on, this medicine should only be employed in extreme cases.

Dose, a scruple of the root, or half a scruple of the extract.



Nº 10.

CHIMAPHILA UMBELLATA.

Winter Green. Primitive Pine.

The first of these
 is the fact that the
 system is not
 self-sufficient
 and that it is
 dependent on the
 outside world for
 many of its
 needs.

THE SECOND

The second of these
 is the fact that the
 system is not
 self-sufficient
 and that it is
 dependent on the
 outside world for
 many of its
 needs.

THE THIRD

The third of these
 is the fact that the
 system is not
 self-sufficient
 and that it is
 dependent on the
 outside world for
 many of its
 needs.

THE FOURTH

The fourth of these
 is the fact that the
 system is not
 self-sufficient
 and that it is
 dependent on the
 outside world for
 many of its
 needs.



PL. 11.
C. 11.
C. 11.

ERICACEÆ.

The Heath Family.

No. 10.

CHIMAPHILA UMBELLATA.

WESTERNHILL. Prince's Pass.

Geog. Position. Woods.

Quality. Anodyne.

Power. Diuretic, stimulant.

Use. Scrofula, dropsy, debility.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER ERICACEÆ.

Linnean Classification.

CLASS X. *Decandra.* ORDER *Monogynia.*

CHARACTERIS. — *Lin.* Sp. Pl. 347. *Willd.* Sp. Pl. II. 622. *Pursh.* Flor. N. A. 306. *Ind. Flor. Med.* 355. *Bignow.* *Med. Bot.* II. 28. *Thurber.* *Veg. Min. Med.* I. 17. *Raf. Med. Flor.* II. 71. *Leach.* *Disp.* 523. *U. S. Disp.* 297. *Sc. Disp.* U. S. 120. *Eschsch.* *Bot.* 305. *Leach.* *Disp.* Pl. 302. *Rolland and Garrod.* *Mat. Med.* 353. *Thomson.* *Mat. Med.* 397. *Perris.* *El. Mat. Med.* II. 306. *Griff.* *Med. Bot.* 243. *Carson.* *Illust. Med. Bot.* I. 62. *Ging.* *Bot. N. U. S.* 323. *Beach.* *Fam. Pl.* 668. *Humbert.* *Bot. Med.* 224. *Henry.* *Med. Herb.* 311. *Kost.* *Mat. Med.* VII. *Wood.* *Class Book.* 379.

GENUS CHIMAPHILA.

From the Greek *chimá*, *crater*, and *phila*, *a friend*; founded upon the vulgar name of the plant, or its sempervirent character.

SYNONYMS. — *Vernice d'Hiver* (Fr.), *Wintergreen* (Gr.), *Das Wintergrün* (Dach.), *Wintergrün* (Dach.), *Wintergrün* (Swed.), *Purula* (H.), *Pippewick*, *Herbe de Puget* (Amer. Ind.), *Rheumatism Wood*, (*Herbe à jointes* (Canadian).

THE ESSENTIAL CHARACTERS.

CALYX. Inferior or superior, five- (seldom four- or six-) leaved or cleft, rarely entire.

COROLLA. Regular or somewhat irregular, four- or five- (rarely six-) cleft, the petals rarely almost distinct.

STAMENS. Generally distinct and inserted with the corolla. Anthers as many or twice as many as the lobes of the co-

rolla, two-celled, generally opening by pores, often appendaged.

OVARY. Free, or rarely coherent with the calyx, two-several-celled. *Style* and *stigma* united into one.

FRUIT. Capsular or baccate.

SEEDS. (Usually) indefinite and minute. *Embryo* straight, lying in the axis of, or in the end of, fleshy albumen.

THE SECONDARY CHARACTERS.

CHIMAPHILA. *Calyx* five-parted. *Petals* five, spreading. *Stamens* ten, erect. *Anthères* large, pendulous, fixed by the apex, two-horned at base, opening by two pores at top. *Style* very short and thick. *Capsule* five-celled, opening from the summit.

Calyx five-parted. *Petals* five. *Anthères* beaked, with two pores at the base below, and at the top after the opening of the flower. *Style* immersed. *Stigma* thick, orbiculate. *Capsule* five-celled, dehiscence at the angles near the summit.

THE SPECIFIC CHARACTERS.

CHIMAPHILA UMBELLATA. *Leaves* cordate-lanceolate, serrate, in fours-sixes. *Flowers* corymbose. *Bracts* linear-subulate. *Style* immersed in the ovary.

Leaves serrate, uniformly green, wedge-lanceolate, with an entire base. *Stems* upright. *Filaments* glabrous.

THE ARTIFICIAL CHARACTERS.

CLASS DECANDRIA. *Stamens* ten. ORDER MONOCOTYLEDON. *Seed* not a legume. *Leaves* not sensitive. *Petals* present, or if not, the plants have no green herbage.

NATURAL HISTORY.

THE CHIMAPHILA UMBELLATA is an humble and beautiful evergreen, and a native of the northern latitudes of Europe, Asia, and America. It is found in all parts of the United States, and extends even to the Pacific Ocean. It grows under the shade of woods, and thrives luxuriantly in a loose, sandy soil enriched by decaying leaves. It is in full flower in June, and has fragrant blossoms, which, with the shining leaves, render it one of the prettiest plants of the season.

The root, which is perennial, is long, creeping, and of a yellowish color, sending off radicals. When chewed, it imparts

to the taste a degree of aromatic pungency not disagreeable. When the root is bruised, it has a strong, unpleasant smell.

The stems arise, often several together, from the root, which they nearly resemble in color at the lower ends; the middle and upper portions are reddish or dingy rose-colored. They vary in height from four to eight inches, and are ligneous at their base. Though generally erect, they are not unfrequently found semi-procumbent. The leaves have the appearance of being whorled, and in general there are two of these whorls on each stem. Sometimes the leaves are alternate and irregularly situated; they are lanceolate and somewhat wedge-shaped, narrowed towards the base, deeply serred on their edges, of a thick coriaceous texture, and of a very shining sap-green color. The corolla consists of petals, which are white, tinged with rose-color; they exhale an odor remarkably agreeable and spicy. The anthers are purple. The germen is of a green color, and always covered with a viscid matter. The seed-vessel is persistent throughout the winter, and is often found on the new plant while it is in flower.

The genus *CHIMAPHILA* was separated from that of *Pyrola* by Pursh, and this classification is now admitted by most botanical writers.

NOTE.—“The *Chimaphila* was long united to the *Pyrola*. Though they possess strong botanical affinities, they differ quite as much in habit, and especially as well as medicinal properties, as other genera of the natural order of Ericaceæ. Such divisions of the Linnean genera, where the ‘natural’ genus gives the characters, ought to be adopted. But divisions founded on any artificial character, however constant and decisive, injure the system.” — LAYTON.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

From the result of the chemical analysis of *CHIMAPHILA UMBELLATA*, it appears that its constituents are bitter extractive, resin, tannin, gum, lignin, fibrine, and saline matters. The resin is brown, adhesive, and odoriferous.

Boiling water and alcohol extract the active properties, particularly the alcohol. The properties are sudorific, stimulant, tonic, and diuretic; the former had long been appreciated before the latter were ascertained. The active principle, however, has not yet been isolated, though it probably exists in the substance called *bitter extractive*. It results, also, from actual experiments, that the decoction strikes a black color with the sulphate of iron, and that there is little or no difference in the quantity of astringency in the leaves and stalks.

The proportions of gum and resin contained in the plant are as follows:—1st. Upon adding alcohol to half an ounce

of the dried leaves, and suffering the mixture to stand for twenty-four hours, exposed to a moderate temperature, then filtering and evaporating to dryness, a residuum weighing eighty-six grains was obtained. By the addition of water to this residuum, nineteen grains of gum were procured. 2d. Upon adding water to half an ounce of the powdered leaves, and letting the mixture remain quiescent twenty-four hours, exposed to the same degree of heat as in the first experiment, and then filtering the infusion and evaporating it to dryness, a residuum was obtained weighing forty-eight grains. By the addition of alcohol, twenty-two grains of resin were procured from the remaining powder.

The *Crinabella umbellata* is entitled to the attention of physicians principally for its diuretic quality. All parts of the plant are, however, endowed with very active properties.

In a case of ascites, having tried digitalis, crystals of tartar, and other diuretics, without any success, the diuretic effect of the infusion of this plant was manifest and considerable. It has also proved serviceable in acute rheumatism, intermittents, and other diseases assuming an intermittent type.

The valuable properties of this plant have been investigated and confirmed by physicians of eminence, both of the Old and New World.

It has been used in dropsy. Sir J. Craig, the Governor of Canada, who labored under this disease, and whose system was cachectic, used a strong infusion of the whole plant, in the quantity of a pint in twenty-four hours; its diuretic property upon the kidneys was perceptible in two days, and the medicine also produced a beneficial effect on the stomach, increasing the appetite. The infusion possesses the decided advantage of being grateful to the stomach, and produces an agreeable sensation soon after it is swallowed, while almost all other diuretics disagree with it. It invigorates the appetite, and strengthens the body; acts powerfully on the kidneys; increases the flow of urine and all secretions. The urine seems to imbibes the color of the infusion of the herb, which is that of an infusion of common green tea.

The use of this plant is very popular in the United States as a remedy for rheumatism and scrofula. The decoction is most generally used, and often in large doses, but the extract is equally good; dose about fifteen grains.

A cataplasma and the decoction may be used externally. They will be found useful in tumors, malignant ulcers, and chronic indurated swellings; they act as a topical stimulant, and sometimes vesicate.

The Indian tribes esteem this plant; they use it chiefly for gravel and retention of urine, inflammatory diseases, rheumatism, and fevers. Farmers apply the leaves in the diseases of horses, particularly when the animal is unable to stalt.





Nº II
LAPPA MAJOR.
Burdock.





COMPOSITEÆ.

The Composite Family.

No. 11.

LAPPA MAJOR.

BURDOCK.

Geog. Position. Europe, America.

Quality. Sweet, sub-acid.

Power. Diuretic, cleansing.

Use. In nephritis, gonæ, erysima, syphilis.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER COMPOSITEÆ.

Linnean Classification.

CLASS XIX. Syngenesia. Order Polygamia Æqualis.

AUTHORITIES. — Lin. Sp. Pl. 1143. Willd. Sp. Pl. III. 1630. Woolf. Med. Bot. I. 33. Pers. Flor. N. A. 345. Lindl. Flac. Med. 418. Barton, Loc. 50. Sp. 70. Ref. Med. Flac. II. 495. Wherry, Med. Diet. 120. Lond. Disp. 182. U. S. Disp. 117. Ec. Disp. U. S. 75. Eason, Bot. 79, 302. Lond. Encyc. Pl. 605. Pennik. J2. Mat. Med., II. 418. Goss. Med. Bot. 414. Gray, Bot. N. U., 5. 345. Beach, Fam. Pl. 644. Howard, Bot. Med. 222. Hays, Med. Herb. 50. Wood, Class-Book, 357.

GENUS LAPPA.

From *Lappa*, a *lass*, or *lass*, Greek, *lappa*, a big fold of a linen wall cloth embracing the Burdock.

Caspar Bauhin, and after him some writers on Botany, have named this genus *LAPPA*, but LINNÆUS adhered to the old name of *Daucoides*, *Arctium*, from the Greek *Arctos*, a bear, from the rough bristly frisk.

SYNGENESIS. — Rudbeck (Fr.), Rudbeck (R.), Martius (Sp.), Gmelin (Klin. (Ger.).

THE ESSENTIAL CHARACTERS.

CALYX. Closely adherent to the ovary, the limb wanting, or membranaceous and divided into bristly hairs, &c., called *pappus*.

COROLLA. Superior, consisting of five united petals, either ligulate or tubular.

STAMENS. Five, alternate with the lobes of the corolla. Anthers cohering into a cylinder.

OVARY. Inferior, one-celled, one-ovuled. Style two-cleft, the inner margins of the branches occupied by the stigmas.

FRUIT. An acheneum, dry, indehiscent, one-seeded, crowned with the pappus.

SEEDS. Solitary, quadrangular.

THE SECONDARY CHARACTERS.

LAPPA. Heads discoid, homogamous. Involucres globose, the scales intricately and hooked at the extremity. Receptacle bristly. Pappus bristly, scabrous, caducous.

Involucres globose, with scales hooked at the apex. Egoe shaft bristly. Receptacle chafly.

THE SPECIFIC CHARACTERS.

LAPPA MAJOR. Leaves cordate, serrated, petioled.

Calices brown heart-shaped, petioled, toothed. Flowers pinkish, globose. Involucres smooth.

THE ARTIFICIAL CHARACTERS.

CLASS SYNGENESIA. Stigmas five, cohering by the tips of their anthers. ORDER POLYGAMIA ÆQUALIS. Herbaceous plants. Flowers or florets collected into dense heads (compound flowers). Corollæ monopetalous, of various forms.

NATURAL HISTORY.

Every one must naturally be well acquainted with the BURDOCK. It intrudes itself on every one's acquaintance by the sharp, firm hooks at the end of the calyx scales, which attach themselves to the clothes, and serve as a remarkable mechanism for dispersing the seeds. It thus manifests an instance of design for this purpose, which cannot be mistaken. Men and animals are made the unwilling agents of scattering widely the seeds of this unsightly plant.

LAPPA MAJOR is a large, conical, ill-scented, and coarse-looking European mass of vegetation, surmounted by a branching, irregular panicle of ovate heads with tubular corollæ of an exceedingly delicate pink color, and covers the ground for some extent around it. The plant is indigenous in Europe, and has become naturalized in the United States. It is biennial, and very common in uncultivated grounds, on the sides of roads, and in waste places by the side of old buildings; it

flowers in July and August, and the seeds become ripe in September. The root is spindle-shaped, simple, externally of a brown color, and internally white; the stem succulent, rising three or four feet in height, with spreading branches, and very large cordate leaves, of a dark green color above and whitish beneath, supported on long footstalks. The flowers are in terminal panicles; the calyx is composed of imbricated scales, with hooked extremities; the corolla is compound, with purple, uniform florets, tubular, five-cleft, and all fertile. The receptacle is punctured; the seed-downs are rough and prickly, and the seeds resemble a pyramid with the wrong end uppermost, crowned with a simple feather.

Burnock is usually considered no better than a weed; it is not allowed to grow in gardens, or in any state of improved cultivation. For this reason no observations are necessary for its culture, but should the plant prove troublesome as a weed, it may perhaps not be amiss to mention, that the root lasts but two years, and consequently it may be destroyed with less trouble than those weeds which have abiding roots. If the plants are cut down before they seed, in two or three years they will be entirely rooted out, for the plants which grow from seeds do not flower till the second year, and when the seeds are perfected the roots decay.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Water dissolves the active principles of *LAPPA MAJOR*. The root contains considerable *galls*, a bitter extractive matter, and some salts with base of potassa. The leaves contain subcarbonate of potassa, nitrate of potassa, and some other salts. The root is nearly insipid, the taste sweetish, with a slight degree of bitterness and astringency. The seeds are aromatic, bitterish, and sub-acid.

The virtues of this plant, according to *Bergius*, are cleansing, diuretic, and sudorific. Many instances are upon record in which Burnock has been successfully employed in a great variety of chronic diseases, scurvy, rheumatism, gout, lues venerea, and pulmonary complaints. Although the plant possesses a bitter taste, it has but slight tonic properties. Though it seems to act as a tonic on the animal economy, yet its effects are generally not very decided. It is, however, more commonly recommended as a diaphoretic and a diuretic, for, when properly administered, it often acts in both these capacities.

This plant, as a diuretic, is known to have succeeded in

dropical cases where other powerful medicines had been ineffectually used, and as it neither excites nausea nor increases irritation, it may certainly deserve a trial where more active remedies are improper. The seeds also possess a diuretic property, and have been given with advantage, in the dose of a drachm, in calculous and nephritic complaints, and, in the form of emulsion, as a pectoral.

The root of this plant is generally used in decoction, which may be made by boiling two ounces of the fresh root in three pints of water to two, which, when intended as a diuretic, should be taken in the course of two days, but, if possible, in twenty-four hours. This decoction is a great sweetener of the blood and juices, and is esteemed by some physicians as being equal, if not greatly superior, to sarsaparilla for this purpose. Perseverance and close application, however, are necessary in order that the system may feel effectually the benefit of this antiscorbutic remedy. The bruised leaves applied to atonic ulcers, to crusta lactea, &c., excite the skin powerfully, and very often produce good effects. The leaves may also be used to great advantage as dressings on the feet. They may likewise be taken green, rolled and saturated with vinegar, and applied to any part of the body suffering with pain. They should, however, always be used hot, with a bandage of woollen cloth or flannel, to excite perspiration. In gouty affections, where the feet are swelled, the same application will be found equally beneficial.

The properties of the Burdock, in general, are mild, since the root, stem, and leaves, boiled, and the former stripped of their rind, are eaten, in some parts of Europe, like asparagus. When raw, they are eaten like radishes, but they are considered a greater delicacy with oil and vinegar. Their use, however, makes the urine milky, and also produces flatulence.

For medicinal purposes, the root of the Burdock should be dug in the spring, before the leaves sprout, or in the fall, after the leaves are dead, as then it possesses the full strength of the entire plant.

Three pounds of the ashes of *Lappa Major*, procured by burning the leaves and stems between the time of flowering and seeding, will yield sixteen ounces of white alkaline salt, equal to the best potash.

For scorbutic patients, the *burdock antiscorbutic syrup* is an invaluable article. Take of yellow-dock and burdock roots each one pound; burdock seeds and American sassa each half a pound; pulverize and mix them well together, and then boil in ten quarts of water for half an hour; strain off, and add half a gallon of good brandy, and the same quantity of molasses. Keep it bottled close for use. Dose, from a quarter to half a glass three times a day, or less or more, as circumstances require.





No. 12.

LIRIODENDRON TULIPIFERA.

Tulip Tree. Poplar.

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THE
COMMON HEDERA
LEAF

MAGNOLIACEÆ.

The Magnolia Family.

No. 12.

LIRIODENDRON TULIPIFERA.

TRIPLE-LEAF. *Poplar.*

Geog. Position. United States.

Quality. Bitter, somewhat aromatic.

Power. Tonic, stimulating.

Use. Intermittent fevers, rheumatism, dyspepsia.

BOTANICAL ANALYSIS.

Natural Classification.

Order MAGNOLIACEÆ.

Linnean Classification.

Class XIII. *Polyandria.* Order *Polygynia.*

Arborescens. — *Lin.* Sp. Pl. 755. *Willd.* Sp. Pl., II. 1254. *Park.* Flor. N. A. 392. *Labr. Flot. Med.* 23. *Engelm.* Med. Bot. II. 107. *Ramon.* Lec. 203. No. 354. *Burton.* Vegg. Mat. Med. I. 92. *Huf.* Med. Flor., II. 229. *U. S. Disp.* 482. *Ex. Disp.* U. S. 343. *Faxon.* Bot. 37. 302. *Loud. Flore.* IV. 428. *Ballard and Garrod.* Mat. Med. 130. *Perrin.* Vg. Mat. Med. II. 744. *Goss.* Med. Bot. 38. *Gray.* Bot. N. U. S. 18. *Boeck.* Fam. Pl. 660. *Howard.* Bot. Med. 264. *Kunt.* Mat. Med. 446. *Wood.* Class-Book. 130.

GENUS LIRIODENDRON.

From Greek, *lily* and *tree*. The flowers, which may be likened to lilies or tulips, grow upon one of the loftiest trees of the forest.

Synonymes. Le Tulipier, L'Arbre aux Tulipes (Fr.); Virginiaische Tulpenbaum (Ger.); Karnaal, Karnaal (Swed.); Der Tulpenboom (Dutch); Tulipero (Port.).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three—six, deciduous, colored like the petals.

COROLLA. *Petals* six—twelve, hypogynous, in several rows, imbricate in aestivation.

STAMENS. Indefinite, hypogynous, distinct, with short filaments and adnate anthers.

OVARY. Several in many rows upon an elongated tocm.

FRUIT. Follicular or baccate, one—two-seeded.

SEEDS. Attached to the inner suture of the carpels, from

which (in *Magnolia*), they are suspended by a long delicate funiculus.

THE SECONDARY CHARACTERS.

LIRIODENDRON. *Sepals* three, caducous. *Petals* six. *Carpels* imbricated in a cone, one- or two-seeded. *Seeds* attenuated at apex into a scale.

Color brown-reddish. *Corolla* six or seven parted, lilaceous. *Stamens* in a tubular corolla sessile, imbricate in a scabrous-like style.

THE SPECIFIC CHARACTERS.

LIRIODENDRON TULIPIFERA. *Leaves* dark green, smooth, truncate at the end, with two lateral lobes, on long petioles. *Flowers* large, greenish-yellow, orange within, solitary.

Leaves truncate at the end, with two side-lobes.

THE ARTIFICIAL CHARACTERS.

CLASS POLYANDRIA. *Stamens* twenty or more arising from the receptacle. (*Hypogynous*.) **ORDER POLYGYNIA.** *Leaves* never peltate. *Trees* with large showy flowers.

NATURAL HISTORY.

The **LIRIODENDRON TULIPIFERA** is a magnificent tree, and may be considered, not only as the pride and ornament of the American forest, but as the most superb vegetable of the temperate zones. It is equally remarkable for its great height, its beautiful foliage, its superb flowers, and handsome wood.

In the Atlantic States, at some distance from the sea, this tree not unfrequently attains the height of eighty or one hundred feet, and is not uncommonly from eighteen inches to three feet in circumference. It is confessedly the largest and thickest tree of North America, with deciduous leaves, except the *Platanus occidentalis* or Plane-tree. It rises with a straight or upright trunk, in general, to the height of more than forty feet. The branches are not very numerous. Those of one summer's growth are of a shining blue color, and are pithy; those two seasons old have a smooth brown bark. When broken, they emit a strong but rather agreeable odor. The bark of the young trees is tolerably smooth, but in old ones it is broken into deep furrows. When the leaves have attained their full growth in the spring, they are generally from six to

eight inches in length, frequently, however, only from four to five long and as many broad. They are supported by foot-stalks of a finger's length, and are dispersed alternately on the stems. They are a little fleshy, of a glossy dark yellowish-green, and singularly formed, being somewhat heart-shaped at their base, horizontally truncated at the top, and notched in the middle down to the middle rib. They are divided into three lobes, those of the sides being rounded off or pointed. This remarkable shape of the leaves, to which there is no exact resemblance in any other vegetable, always distinguishes the tree from all others at first sight. Their upper surface is of a darker color than the lower, and smooth underneath; the veins are prominent and conspicuous. The leaves fall early in autumn. The buds of the ensuing year's shoots begin soon after to dilate, and they increase so rapidly, that by the end of December they are an inch long and half an inch broad. The young leaves are enfolded in elliptical, obtuse, deciduous stipules.

The flowers are singularly beautiful, being variegated with yellow-orange and lake-green, and are fully expanded in common seasons about the end of May. They are exceedingly numerous on a single tree, and are supported by peduncles, which grow from the extremities of the branches. They are sometimes compared to the flowers of the *Fritillaria imperialis* or Crown Imperial, but they have a more palpable resemblance to those of the tulip. This likeness, indeed, has given rise to the specific name. Though destitute of odor, their extreme beauty, together with the singular foliage, renders them, like the small Magnolia, general favorites.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Distilled water produced from the bark of the Tulip-tree, though not altogether insipid, possesses faintly the peculiar flavor of the bark. It is somewhat acid in the fauces, and its odor is exceedingly agreeable, being considerably impregnated with the aroma of the vegetable. It neither precipitates iron from its solutions, nor affects in the slightest manner the blue color of vegetable substances. Upon the application of a higher degree of heat to this distilled water, the liquor which comes over has an acid and very astringent taste. It changes blue vegetable substances red, and precipitates iron black; consequently the result is an essential oil, with aroma in great abundance, and an acrid astringent acid.

The bark of the *LIRIODENDRON TULIPIFERA* is considerably stimulant, yet its properties scarcely entitle it to a place under the head of stimulants. It is more properly considered a tonic. It sometimes acts as a sudorific, and hence its usefulness in chronic rheumatism. Its powerful diaphoretic effects are certainly produced by its stimulant power, and therefore it is absolutely inadmissible as a medicine in acute rheumatism. The bark of the root is simply tonic in its effects. It is a strong bitter, containing a small portion of a warm aromatic property, and an essential oil. It has been employed by physicians in the United States as a tonic. And it has been found particularly beneficial in the last stage of dysentery, and the powdered root has been used, combined with steel dust, in disorders of the stomach, with success. Eminent physicians, also, have prescribed the bark of the Tulip-tree in a variety of cases of the intermittent fever, and declare it equally efficacious with the Peruvian bark, if properly administered. In the phthisis pulmonalis, attended with hectic fever, night sweats, and diarrhoea, when combined with iudannum, it has frequently abated these alarming and troublesome symptoms. A gentleman, fifty years of age, who had been afflicted with a catarrh and dyspeptic symptoms for five years, and which baffled the most celebrated remedies, was effectually cured by persevering in the use of this bark for two weeks.

There is not a more certain, speedy, and effectual remedy in the hysteria than the bark of the Tulip-tree, combined with a small quantity of iudannum. In the cholera infantum, after cleansing the primæ viæ, there is no better remedy. It is also an excellent vermifuge. In a child, when convulsions had taken place, after having taken a few doses, several hundred dead ascarides were discharged with the stools.

Mr. Lawson, in his History of North Carolina, speaks of a disease allied to syphilis, which occasionally destroys the nose, as existing among the aborigines of that country, and he states that the juice of the Tulip-tree is used as the proper remedy for this distemper.

The bark of the root of the Tulip-tree can be given in extract, dissolved in water, in infusion and in decoction; but its virtues are most decided when administered in substance. Should it act on the bowels, or should the stomach be too weak to bear it in this form, a few drops of iudannum may be combined with it. The dose of the bark for an adult is from a scruple to two drachms. In Virginia, the country people infuse equal parts of the bark of the roots of the Tulip-tree, and that of the trunk and stems of the *Coccoloba Florida* or Dogwood, in brandy; they suffer the infusion to digest for eight days, and give the tincture in the dose of two wine-glasses a day, in intermittents. The dose of the powder of the Tulip-tree to an adult is from a scruple to two drachms.



N^o 13.

MARUTA COTULA

May Weed Wild Flower.



COMPOSITE.

The Composite Family.

No. 13.

MARUTA COTULA.

MAY-WEED. Wild Cucumber.

Geog. Position. Europe.

Quality. Bitter, felid.

Power. Tonic, emetic, antispasmodic, emmenagogue.

Use. Hysteria, epilepsy, dropsy, scrofula, asthma.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER COMPOSITE.

Linnaean Classification.

CLASS XIX. *Syngenesia.* ORDER Polygamia.

Authorities.—Lin. Sp. Pl. 434. Willd. Sp. Pl. III. 2031. Pers. Flac. N. A. II. 342. Lindl. Flac. Med. 459. Barton. Loc. 58. No. 53. Barton. Veg. Mat. Med. I. 957. Raf. Med. Flac. I. 44. Whittier. Med. Diet. 100. U. S. Disp. 287. Ec. Disp. U. S. 87. Yarrow. Bot. 48. 128. Lond. Encyc. Pl. 714. Gerb. Med. Bot. 400. Canon. Hist. Med. Bot. I. 38. Gray. Bot. N. U. 8. 233. Benth. Fam. Pl. 643. Howard. Bot. Med. 215. Henry. Med. Herb. 129. Kunt. Mat. Med. 300. Wood. Clin. Med. 242.

GENUS MARUTA.

Derivation unknown. The ANTHEMIS of LINNÆUS, supposed to be derived from the Greek *ἀνθεμ*, = *flower*, having an abundance of flowers.

SYNONYMS.—*La. Cucumber grass* (Fr.). *Die stinkende Kamille* (Ger.). *Stinkende Kamille* (Dutch). *Koofm. kramlikomerkillems* (Dan.). *Sorkaller* (Swed.). *Cucumilla felida* (It.). *Maximilla felida* (Sp.). *Solotocha trava* (Russ.).

THE ESSENTIAL CHARACTERS.

CALYX. Closely adherent to the ovary, the limb wanting, or membranaceous and divided into bristles, hairs, &c. called *pappus*.

COROLLA. Superior, consisting of five united petals, either ligulate or tubular.

STAMENS. Five, alternate with the lobes of the corolla. Anthers cohering into a cylinder.

Ovary. Inferior, one-celled, one-ovuled. Style two-cleft, the inner margins of the branches occupied by the stigmas.

Fruit. An acheneum, dry, indehiscent, one-seeded, crowned with the pappus.

Seeds. Solitary, quadrangular.

THE SECONDARY CHARACTERS.

MARUTA. *Invulvere* hemispherical, imbricated. Rays neutral. *Disk* perfect. *Receptacle* conical, chaffy (at least at the summit). *Pappus* wanting. *Achenia* smooth.

Invulvere hemispherical. Scales with various margins, nearly equal. *Ray* wanting, or a membranous margin. *Flowers* of the ray wider than long. *Receptacle* slight, flat, with a rigid, acuminate apex. *Achenia* covered with a membranous border at apex.

THE SPECIFIC CHARACTERS.

MARUTA COTTEA. Stem erect, nearly smooth. Leaves bipinnatifid, segments linear-subulate. Claff briefly, shorter than the flowers. Flowers solitary, on terminal, striated stalks.

Receptacle concave. Claff briefly. *Achenia* naked. *Leaves* two-pinnate. *Leaflets* subulate, three-parted. *Flowers* small, numerous, tubular.

THE ARTIFICIAL CHARACTERS.

CLASS SYNCENESIA. *Sowers* covering by the tips of their withers. **ORDER POLYOGAMIA.** *Herbaceous* plants. *Flowers* or *bracts* collected into dense heads (compound flowers). *Corollas* monopetalous, of various forms.

NATURAL HISTORY.

The **MARUTA COTTEA** designates a family of plants of the chamomile kind, all the species of which are strikingly alike. The species now under consideration, commonly known as May-weed or Wild Chamomile, is indigenous on this continent, though naturalized in all waste places, in hard dry soils, especially by road-sides, in patches of great extent, presenting almost a uniform whitish surface when in blossom; rather repulsive, however, from its peculiar and disagreeable smell. The whole plant is slightly covered with suppressed, woolly hairs or down, perceptible to the naked eye, but very conspicuous under a lens. The root is annual, simple, or sometimes caudexed, fibrous. Stalks from one to two feet high, irregularly angular, finely furrowed, or sometimes only striated, erect, and very much branched, down to the bottom. The

leaves are alternate, sessile, nearly smooth, divided and subdivided into linear segments. Flower-stalks solitary, striated. Calyx common to all the florets, hemispherical, imbricated, hairy, scabrous or rough, the scales narrow, slightly margined, of a pale green color. Florets of the ray white, spreading, a dozen or more in number. Disc yellow, and of a bright golden color.

The ray florets are female, lanceolate, inclining to ovate, two-ribbed, and toothed (more or less deeply) at the apex. They are reflexed from sunset till morning, but spreading horizontally during the day. They are pure white, slightly tinged with greenish-yellow at the base. The tubular part of the floret, as well as the germ, is garnished with transparent glands, visible without a glass, but more conspicuously apparent and beautiful under one. Stigma bilid, with segments reflexed. Receptacle conical, or nearly cylindrical, surmounted by rigid, bristle-shaped paleae or chaff. Seeds, obovate bilantly, four-cornered, sulcated, sometimes roughly tuberculated, and of a brownish color.

The plant ranges extensively over every part of the United States, and is well known. It flowers from midsummer till late in the fall, and sometimes it may be seen luxuriantly blooming as late as December. It is cultivated on account of the flower, which is a safe bitter and stomachic. The double-flowering variety, though more beautiful, is less useful, the aromatic principle not residing in the floretules of the ray, the multiplication of which constitutes the variety, but, notwithstanding, is most cultivated, on account of its greater bulk and weight.

The plant delights in a poor, sandy soil, and is propagated by parting the roots, or by slips of the rooted offsets, or of the runners.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The virtues of the May-weed or Wild Chamomile have long been acknowledged, but still are imperfectly known. Few of our common plants have been more extensively used in domestic medicine, and yet popular sentiments alone have too slight a foundation on truth to secure their permanence.

By distillation with water *MARUTA CORYLLA* yields a small quantity of essential oil, on which the odor and stimulant power of the plant seem to depend. The active principles are supposed to be extractive, resin, and essential oil, the same

is those of *ANTHEMIS NOBILIS*, but weaker and less pleasant to the taste, and consequently not so generally used.

The smell of the plant resides in a volatile oil, possessed of a strong or graveolent aroma, and diffused throughout the plant, although concentrated principally in the flowers. It is similar to the smell of Chamomile, but more pungent and less balsamic. The oil is bitter, and communicates a bitterish, acid taste to the whole plant.

The plant is an active tonic, sudorific, stimulant, anodyne, emetic, and repellent, extensively employed throughout the country in hysterics, epilepsy, dropsy, scrofula, and asthma, both internally and externally. The external use in warm baths or fermentations is serviceable in rheumatism, suffocations, hemorrhoidal swellings, pains, and contusions. When given in substance, united with opium and astringents if the bowels be easily affected, the flowers of this plant have been successfully used for the cure of intermittents; and the infusion, in combination with ginger or other aromatics and the alkalies, is an excellent stomachic in dyspepsia, goit, flatulent cholera, and chronic debility of the intestinal canal. The decoction and infusion are given for colds, fevers, rheumatism, &c., but a small quantity, if too strong, may produce vomiting, and even if weak, it sometimes nauseates.

MARTHA COTULA always acts as a sudorific, promoting copious sweatings, and it is often beneficial as an auxiliary to an emetic; in this respect it is extremely beneficial, uniformly encouraging and promoting the action of the emetic, and in a more powerful manner than warm water operates.

An infusion of the leaves is good in hysterical disorders, and promotes the menses. The herb boiled till it becomes soft, and then applied in the manner of a poultice, is an excellent cure for that troublesome and vexatious complaint, the piles.

May-weed is usually employed in the form of a tea, which should be prepared by steeping the herb in hot water. Drank freely, on going to bed, it is an excellent, safe, and harmless remedy in sudden colds and slight attacks of disease. Pour a quart of boiling water on a handful of the dry leaves and flowers, and from a teacupful to half a pint may be taken every two hours in case of fevers; and in colds, the patient may take half a pint or more on going to bed. It produces copious perspiration, requiring caution and care, and in some instances is followed by vomiting.

The flowers of this plant are a mild and grateful tonic, and well adapted to cold, relaxed, and weak conditions of the digestive organs. With this view, the flowers are generally directed in cold infusion, to be made in a glass vessel.

The flowers should be gathered in their prime, just when full blown; they should be spread to dry in a shady place, and put into paper bags and housed for use.



№ 14

FRUIT OF THE
 BERRY TREE

ANNUAL REPORT

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AQUIFOLIACEÆ.

The Holly Family.

No. 14.

PRINOS VERTICILLATUS.

WINTERHURDY. *Black Alder.*

Geog. Position. Europe, United States.

Quality. Bitter.

Power. Tonic, alterative, astringent.

Use. Jaundice, diarrhoea, intermittent fever.

BOTANICAL ANALYSIS.

Natural Classification.

Order AQUIFOLIACEÆ.

Linnean Classification.

Class VI. *Hexandria.* Order *Monogynia.*

Authorities. Læs. Sp. Pl. 471. Willd. Sp. Pl. II. 373. Pursh, Flur. S. A., I. 225. Engelm., *Med. Bot.*, III. 141. Benth., *Loc.* 247, No. 445. Benth., *Veg. Mat. Med.*, I. 283. Raf. *Med. Flor.*, II. 253. U. S. Disp. 554. Ex. Disp. U. S. 237. Eaton, *Bot.* 54. 275. Loud. *Encyc.* Pl. 240. Giff. *Med. Bot.* 434. Gray, *Bot. N. U. S.* 476. Boeckl. *Fam. Pl.* 664. Howard, *Bot. Med.* 285. Henry, *Med. Herb.* 13. Wood, *Class Book*, 397.

GENUS PRINOS.

Prinos, Greek name for the scarlet oak (now laurel oak), applied on account of its scarlet berries in winter. *De ryle*, is now, alluding to the serrated leaves.

Synonymes. — *Apalancha à Feuilles de Prunier* (Fr.). *Die Weichhäutige Winterberr* (Ger.).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four—six, imbricate in aestivation.

COROLLA. Regular, four—six-cleft or parted, hypogynous, imbricate in aestivation.

STAMENS. Inserted into the tube of the corolla, and alternate with its segments. *Anthers* adnate.

OVARY. Free from the calyx, two—six-celled, with a solitary suspended ovule in each cell.

FRUIT. Drupaceous, with two-six stones or nucules. *Albumen* large, fleshy.

SEEDS. Solitary and roundish.

THE SECONDARY CHARACTERS.

PRINOS. *Heads* often diocious or polygamous. *Calyx* mostly six-cleft. *Corolla* six-parted, rotate. *Stamens* four-six. *Berry* roundish, much longer than the calyx. *Seeds* bony, convex on one side, angular on the other.

Calyx inferior, six-cleft, small. *Corolla* wheel-form, six-cleft or six-angled. *Berry* six-angled. *Seeds* umbilicate.

THE SPECIFIC CHARACTERS.

PRINOS VERTICILLATUS. *Leaves* deciduous, oval, serrate, acuminate, pubescent beneath. *Flowers* axillary, the fertile ones aggregate, the barren subumbellate. *Leaves* deciduous, oval, serrate, acuminate, pubescent beneath.

Parities of staminal flowers axillary, umbelliform, the pistillate flowers are aggregated, both in a panicle.

THE ARTIFICIAL CHARACTERS.

CLASS HEXANDRUM. **STAMENS** SIX. **ORDER** MONOCOTYLED. **EXOGENE**, **MONOPETALOUS**.

NATURAL HISTORY.

One of the most beautiful ornaments of the swamps of our country, in the autumn and winter, is the *PRINOS VERTICILLATUS*, or Winterberry. The elegant color of the berries, aggregated in numbers of two and three on the small branches of the shrub, together with their multitude, affords a pleasing contrast to the fading vegetation of the season.

The generic name, *PRINOS*, is of very ancient origin, having been used by Theophrastus and Dioscorides, and it is supposed to be derived from the Greek verb *πρίω*, to saw, and to have been applied to this genus by Linnaeus, on account of the strong serratures of the leaves in some of the species.

Winterberry or Black Alder is a shrub from eight to ten feet high, readily discovered, growing in and near swamps, on the borders of rivulets, and in woods everywhere, from Canada to Georgia. It flowers in the months of June and July, and at first has a very ordinary appearance; but when

the berries are fully ripe, about the last of October or beginning of November, the plant is strikingly beautiful. At these periods the leaves remain on, but even after they have fallen off, the appearance of the shrub, with its multitude of rich crimson and sometimes scarlet berries, is quite attractive and exceedingly handsome.

The stem is shrubby, and branched all the way up. The branches are alternate, horizontal, spreading, and of a bluish-gray or ash color; the extremities or new shoots are somewhat greenish. The leaves are oval, narrowed at their base into a short petiole, ending in a long point, and sawed on their edges, uncinately serrate, with prominent pubescent veins beneath. They are of a dark or somewhat olive-green color, and smooth above, but downy on the nerves and veins beneath. They are alternately arranged along the branches, and are supported by short footstalks. The flowers are often dioecious, small and white, in imperfect umbels or heads, and sometimes monocious. They grow together in axillary and lateral groups of from three to four in number, rarely solitary. The corolla is monopetalous, rotate, and six, sometimes seven-cleft. The stamens are generally six in number. The berries vary a little in size, but they are generally of the magnitude of a marrowfat pea. They grow in little-bunches (apparently verticillate), roundish, six-celled and six-angled, permanent, and of a bright scarlet hue, but as winter advances, they become of a more purplish color.

The shrub grows well in light soil, but it prefers peat; it is increased by layers or seeds. When sought for medical purposes, it should be gathered in flower and fruit.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

PRINUS VERTICILLATES is, perhaps, as well known among country people and farmers (who usually call it Black Alder), as any indigenous medicinal plant of the United States. It is universally and justly celebrated as a valuable remedy in a variety of cases requiring medical aid.

The bark is astringent, bitter, pungent, and not very disagreeable. The first of these virtues has probably led to its use in diarrhoea, which it has effectually cured in a great variety of cases. It has been advantageously used as a substitute for Peruvian bark in intermittent fevers and other complaints, both in substance and decoction. It is much used, and efficaciously, as a tonic and corroborant in cases of

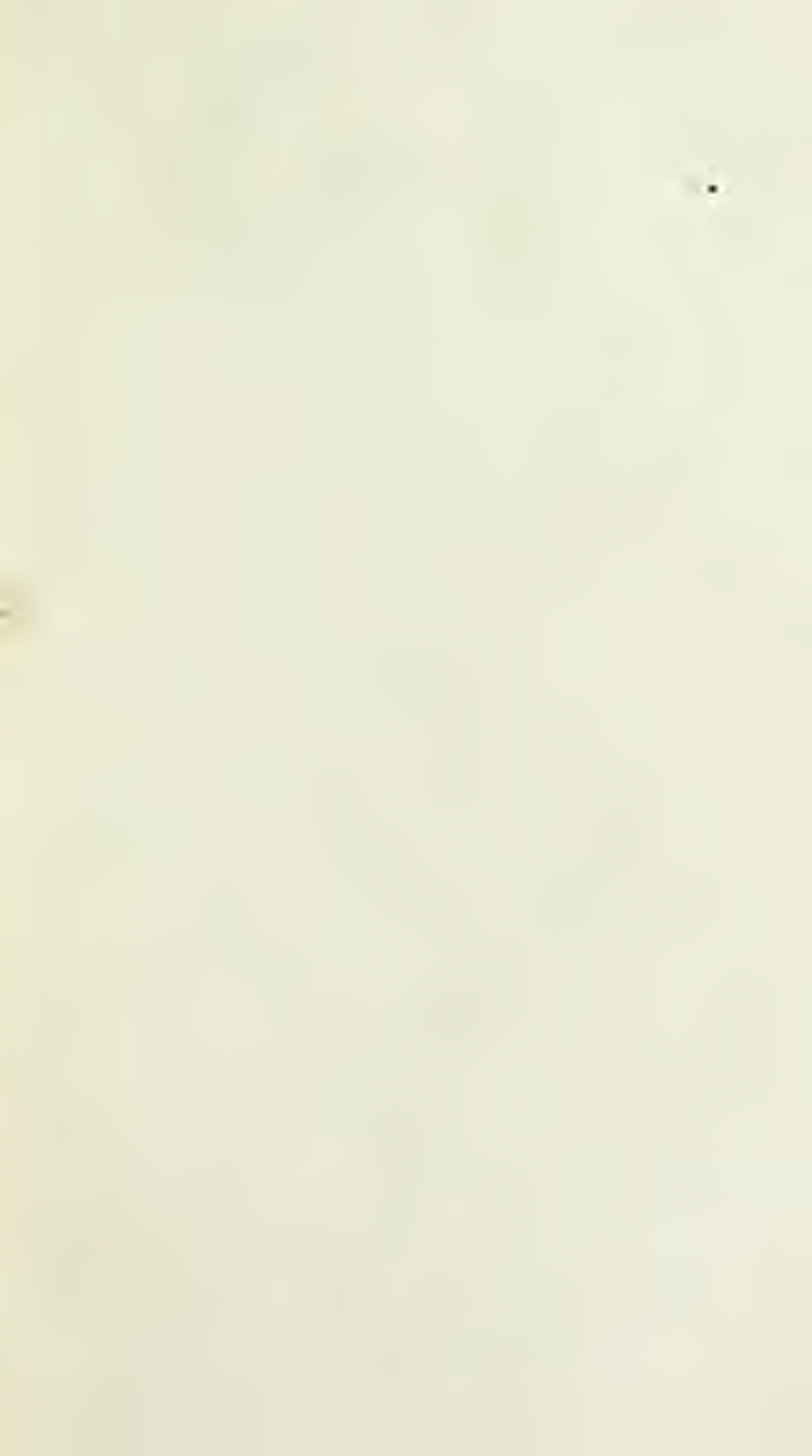
great debility, unattended by fever, and has been highly extolled. Both the sensible properties and well-known effects of the bark of this plant render it very probable that its reputation in such cases is well merited. It has also been used and praised in anasarca and general dropsy, and as an antiseptic and tonic in cases of incipient gangrene. In these cases the bark is generally given internally, and employed at the same time externally as a wash.

The berries of the plant likewise participate in all the virtues already enumerated, as appertaining to the bark, and infusions or tinctures made of them are in general use, and efficacious throughout the country where bitter tinctures are indicated. Country practitioners very commonly combine the bark with the root of saasafras (*Laurus saasafras*), with white-oak bark, and other things, and make a decoction of the mixture, which is used to great advantage, and much commended by them, as a wash in foul ulcers and gangrene. The berries are cathartic and vermifuge, and form, with cider-apples, a pleasant and effectual worm medicine for children.

The outer bark of the *WINTERBURY* is of a blackish color, but the inner is yellow, and being chewed, has the effect of turning the saliva saffron-color. Half an ounce of the inner yellow bark, boiled in beer, is an effectual purge, and a larger quantity has often proved serviceable against constipations in the bowels of cattle.

The bark may be used either in substance or in decoction. The latter is perhaps to be preferred, because to it the bark more readily yields its virtues; as it also does to vinous or spirituous menstrua. From one drachm to three of the powdered bark may be administered in the course of twenty-four hours. An ounce of the bark added to a pint and a half of water, and boiled down to a pint, will make a useful decoction, which may be taken in the dose of a gill every two hours. A saturated tincture is a convenient and useful way of extracting the virtues of the plant, and this tincture may be made by mixing the bark and berries together, and letting them digest for a few days. This is an excellent bitter and preservative against worms in children, and in adults, drank continually, is a valuable remedy for the bleeding piles.

The unripe berries dye wool green, and the bark yellow. Thus the *FRAXO VERTICILLATUS* may be confidently recommended, as a plant possessing, in an eminent degree, the properties of vegetable astringent and tonic medicines. And if to these are added its antiseptic powers, it will certainly be found deserving no ordinary commendation. The use of the bark and berries is universal and popular, and consequently the plant claims attention for those commendations bestowed upon it for its other virtues. Black Alder bark is an ingredient of several alterative syrups.





Nº 15

ERIGERON PHILADELPHICUM

(Erigeron philadelphicus L.)

inner margins of the branches occupied by the stigmas.



— N° 15.
ERIGERON PHILADELPHICUM.

(Erigeron philadelphicus, L.)

COMPOSITÆ.

The Composite Family.

No. 15.

ERIGERON PHILADELPHICUM.

SCABROCK. Philadelphia Fleabane.

Geog. Position. Europe, North America.

Quality. Purgent, bitter.

Power. Tonic, astringent, diuretic.

Use. Gout, gravel, diarrhoea.

BOTANICAL ANALYSIS.

Natural Classification.

OTHER COMPOSITÆ.

Linear Classification.

CLASS XIX. Symplesis. OTHER Polygonia.

APPROPRIATE. — WILD. Sp. IV., III. 1956. BASTON, Lee. 146, No. 145. ERMANN, Voy. Mar. Méd., I. 222. RAT. MED. FLO., I. 162. U. S. DISP. 324. EC. DISP. II. 8. 166. ERMANN, Bot. 21. 233. LINDL. ENCYC. 12. 764. GRAY, Bot. N. U. S. 205. GRAY, Bot. N. U. S. 205. HORNEMANN, Bot. Med. 242. KIST, Mat. Méd. 219. WOOD, Class-Book, 439.

GENUS ERIGERON.

From the Greek *ἔρως*, the spring, *γέρων*, an old man, because it becomes hoary early in the season.

SYNONYMES. — Verschiedenblättriges Biersaugkraut (Ger.)

THE ESSENTIAL CHARACTERS.

CALYX. Closely adherent to the ovary, the limb wanting, or membranaceous and divided into pale, bristles, hairs, &c. called *pappus*.

COROLLA. Superior, consisting of five united petals, either ligulate or tubular.

STAMENS. Five, alternate with the lobes of the corolla. Anthers cohering into a cylinder.

Ovary. Inferior, one-celled, one-ovuled. Style two-cleft, the inner margins of the branches occupied by the stigmas.

PAUT. An achenium, dry, indehiscent, crowned with the pappus.

SEEDS. Solitary, quadrangular.

THE SECONDARY CHARACTERS.

ERIGON. Heads many-flowered, sub-hemispherical. Rays flowers very numerous (forty—two hundred), narrow, linear. Flowers of the disc perfect. Receptacle flat, naked. Involucres ready in one row. Pappus generally simple.

Involucres imbricate, sub-hemispherical. *Ray* pale, double. *Outer ray* minute and chaffy. *Flowers of the ray* linear, very narrow, numerous.

THE SPECIFIC CHARACTERS.

ERIGON PHILADELPHICUM. Pubescent or hirsute. Leaves thin, lower spatulate, crenate-decidate, upper oblong-oblanccolate, narrowed to the clasping (sometimes cordate-aureolate) base, subsessile. Heads few, on long, slender peduncles. Rays very numerous, filiform, more than twice longer than the involucre.

Pubescent. Leaves wedge-oblong, rarely gash-toothed, cordate ones half-clasping. Stems weak, simple, corymbel above. *Pappus* elongated, one-flowered. *Seeds* capillary, twice as long as the hemispherical involucre.

THE ARTIFICIAL CHARACTERS.

CLASS SYNGENESIA. Stamens coloring by the tips of their anthers. **ORDER POLYUMIA.** Herbaceous plants. Flowers or florets collected into dense heads (compound flowers). Corollas monopetalous, of various forms.

NATURAL HISTORY.

The genus, of which two species are indiscriminately combined, is the *Speiopus* of the ancient Greeks, and common to Europe and North America. The two plants are usually distinguished by the names Scabious and Sweet-scabious, but for what reason cannot be satisfactorily ascertained. The vulgar epithets, Sackish, Cocosh, &c. are also frequently applied to the species under consideration, as well as to the *ERIGON HETEROPHYLLUM*.

Sweet-scabious is a plant as common in the United States as its companion, Scabious, and they are always found growing together, and both of easy culture, in common light soil. The whole plant, Sweet-scabious, is of a dark or deep-green color, in which it strikingly differs from the other species.

The ERIGERON PHILADELPHICUS is an herbaceous perennial plant, two or three feet in height, much branched at the top, and pretty common in fields and pastures. The root is also branched, somewhat fibrous, and of a yellowish cast. The stem is slender. The branches are pubescent. Leaves radical, ovate-lanceolate, on long petioles, and occasionally having one or two serratures. The upper leaves are lanceolate, entire, sessile, and somewhat amplexicaule. Flowers numerous, erect, situated on a large, diffuse panicle. Florets of the ray capillary, whitish or blue, sometimes purplish. The plant begins to flower in July, and continues blooming through the month of August. It ranges extensively throughout the United States, particularly in fields and pastures, and is seldom seen in woods and mountains. It should be collected for medical use while in flower, and carefully dried in wrapping-paper. Farmers generally consider the plant a pernicious and troublesome weed, but it is easily extirpated.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

From the result of the chemical analysis of ERIGERON PHILADELPHICUS, and its congeners, they appear to contain tannin, anarise, extractive, gallic acid, and an essential oil. This oil is very singular, being as fluid as water, of a pale-yellow color and peculiar smell, stronger than that of lemon, and of a very acid taste. The smell of the plants is best unfolded by rubbing them, and is not unpleasant. Their taste is astringent, armonious, and bitter.

These plants deserve the attention of physicians on account of their valuable medical properties. They possess very active powers; they are astringent, diuretic, emmenagogue, pectoral, styptic, sudorific, and tonic. They act in a manner peculiarly their own, in consequence of their acid quality. Their oil is so peculiar and powerful, that only two or three drops dissolved in alcohol have suddenly arrested uterine hemorrhage.

The diuretic qualities of these plants have been long known, and are much used in gravelly and gouty affections. On the commencement of an attack of gout, much relief of its pains may be obtained from the use of this medicine. It has also been much praised for its remediate virtues in calculus and dysury; in cases of the latter kind, attended with great pain and irritability of the bladder, the patient found great relief and advantage from its use. Scabious has also been prescribed in ascites, anasarca, chronic diarrhoea, cutaneous eruptions, acphritis, suppressed menstruation, hydrothorax, dry coughs, dimness, rash, cold hands and feet.

The whole plants are used, fresh or dried, in infusion, decoction, or tincture. The decoction should be used to the extent of a pint or two in the course of twenty-four hours. It possesses the estimable property of being innocent to the stomach. This organ will not reject the decoction of these herbs when it is so disordered and irritable as to render the squill, digitalis, &c. intolerable. In a case affected with gout and general dropsy, attended with distressing pain in the bowels, and so disordered a state of the stomach that the squill could not be administered, and yet it was necessary to give some active diuretic, most essential relief was found in this medicine. The infusion, decoction, or tincture may be applied, and are beneficial in all diseases of the bladder and kidneys, attended with pain and irritation, and they afford speedy relief. They have increased the daily evacuation of urine at least threefold. In all dropsical disorders they act as diuretic; in chronic diarrhoea, as astringent, and have effected cures without any auxiliary.

The extract from these plants is rather fetid, and more astringent than the infusion or decoction, but less than the oil, which is one of the most efficient vegetable styptics known. This extract and a syrup of the plant have been prescribed with considerable advantage in dry coughs and internal hemorrhages. The dose is from five to ten grains of the extract, often repeated. The most valuable medicinal property of these plants is, however, the astringent and styptic power of the oil, which undoubtedly has been the means of saving many lives in parturition and uterine hemorrhage. A saturated solution of the oil in alcohol, properly applied, and a small quantity given in a spoonful of water, will afford the most essential relief.

It is evident that these plants do not act as other diuretic and astringent remedies, but by a peculiar arid effect on the system, worthy of investigation; they appear to increase, as well as to prevent, several discharges from the body.

These plants were well known to the Northern Indians, by the name of Cocash or Squaw-weed, as emmenagogues and diuretics. By the inhabitants of Cochinchina, who call them *Cay cox ant*, they are recommended for the same virtues.

From the similarity of the two plants, the *ERIGON HETEROPHYLLUM* has a just right to participation in the reputation bestowed on the other species. They have certainly been confounded with each other and used indiscriminately.

The *ERIGON CANADENSE*, *Grande Fleche*, is more astringent than the other varieties. Its oil is much in use as a powerful remedy in uterine hemorrhage; four to six drops dissolved in alcohol and given in a little water acts promptly and efficaciously. It may be repeated in five or ten minutes, if required.



Nº 16.

SABBATIA ANGUSTATA.

(American Gentian.)



GENTIANÆ.

The Gentian Family.

No. 16.

SABBATIA ANGULARIS.

AMERICAN CENTAURY.

Geog. Position. United States.

Quality. Bitter.

Power. Emmenagogue, stomachic.

Use. Stomachic, febrifuge.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER GENTIANÆ.

Linnean Classification.

CLASS V. *Pentandria.* ORDER *Monogynia.*

Authorities.—*Linn. Sp. Pl.* 272. *Willd. Sp. Pl.* I. 1067. *Pursh. Flor. S. A.* I. 137. *Lind. Flur. Med.* 379. *Engelm. Med. Bot.* III. 147. *Bartem. Lec.* 31. No. 155. *Ramon. Vég. Méd. Mod.* I. 235. *Ref. Méd. Flor.* II. 76. *U. S. Disp.* 629. *Ec. Disp. U. S.* 324. *Taton. Bot.* 45. 494. *Loefl. Envy. Pl.* 130. *Hallard and Garrod. Mat. Méd.* 337. *Thomson. Mat. Méd.* 574. *Griff. Med. Bot.* 478. *Gray. Bot. U. S.* 395. *Beck. Fam. Pl.* 644. *Hesey. Med. Herb.* 73. *Kent. Mat. Méd.* 460. *Wood. Class-Book.* 328.

GENUS SABBATIA.

Named by Adanson, in honor of Liberato Sabbati, an Italian botanist, who published (1772) many excellent botanical works.

Synonymes. *Custaria angularis* (Fr.), *Tausenigoldsteinium* (Gr.), *Custaria* (H.), *Gentiana Custaria* (Sp.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals four—five—ten, united at base, persistent.

COROLLA. Usually regular, limb divided into as many lobes as there are sepals, mostly twisted in aestivation.

STAMENS. Issuing from the tube of the corolla, as many as its lobes, and alternate with them.

OVARY. One-celled, sometimes rendered apparently two-celled by the introflexed placentæ. Style united into one, or wanting. Stigmas one—two.

FRUIT. Capsule many-seeded.

SEEDS. Small. Embryo straight, with fleshy albumen.

THE SECONDARY CHARACTERS.

SABRATIA. *Calyx* five- or twelve-parted. *Corolla* rotate. *Limb* five- or twelve-parted. *Stamens* five (= twelve). *Anthers* erect, at length recurved, two-celled, cells distinct. *Sigmas* two-parted, with spiral divisions. *Capsule* one-celled, the valves a little introflexed.

Calyx five- or twelve-parted. *Corolla* wheel-form. *Sigmas* two, spiral or coiled. *Anthers* becoming proflate. *Capsule* two-valved, many-seeded. *Flowers* campanulate, inferior. *Stems* covered.

THE SPECIFIC CHARACTERS.

SABRATIA ANGULARIS. *Stem* quadrangular, with winged angles. *Leaves* ovate, amplexicaul, five-veined. *Panicle* corymbose. *Peduncles* elongated. *Sepals* lance-linear, half as long as the corolla, distinct almost to the base. *Corolla* segments, obovate, obtuse.

Stems erect. *Leaves* heart-ovate, clasping. *Flowers* with long peduncles, corymbose, divisions of the *calyx* lance-linear. *Stems* with four margined angles.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. **STAMEN** five. **ORDER** MONOGYNIA. (Monopetalous.) *Flowers* inferior. *Corolla* regular. *Herb* rarely shrubby. *Stamens* alternate, with petals. *Fruit* capsule or berry. *Capsule* one-celled, many-seeded.

NATURAL HISTORY.

SABRATIA ANGULARIS is a species very common in the meadows of the United States. It is known by the name of American Centaury, or Angular Centaury, and is no less valued for its medicinal virtues than admired for its beauty. It is commonly found in wet, low meadows, sometimes on hills and in neglected fields, and there is no difficulty in its cultivation.

This plant differs from the *Chironia Centaureum* of Europe, in the circumstance of the flowers, as well as the other parts of the plant, being intensely bitter. In every other respect it is very similar, and equally deserving of popular favor.

The root is annual, fibrous, and yellow, divided into many parts, and furnished with numerous fibres. Stem straight, from ten to eighteen inches high, with opposite branches, forming a corymb, smooth, square, with small wings on the angles. Leaves opposite, quite sessile, subcordate, and clasping, very smooth, nerved, ovate-acute, very entire. Flowers terminal, handsome, inodorous, forming a large corymb. Co-

rolla with obovate spreading segments, twice as long as the calyx, of a fine rose-color, above much paler, and nearly white in the centre underneath, which gives to the buds a white appearance. In the centre of the corolla there is a defined pentangular star, of a rich yellow color, bordered with green. The petals are obovate, and vary in being narrower, sometimes nearly lanceolate-obtuse. The calyx consists of five narrow acute or almost subulate segments, little more than half the length of the corolla. The anthers are spiral, and of a rich yellow color.

The order to which the plant now under consideration belongs is somewhat extensive, and consists of herbs with a watery juice, and in almost all cases opposite and entire leaves. The flowers are much esteemed, and generally considered handsome. The species are found in all parts of the world, from the frigid zones to the tropics. They all are pervaded by a bitter principle, which is most developed in the roots in some genera, and in the leaves and stalk in others. From this identity of properties, except that in some, especially in a fresh state, a slight narcotic power exists, they may be employed indifferently.

The small genus *SABZATIA* of North American plants consists of biennial species, mostly with rose-colored flowers of considerable beauty, and possessed of very bitter properties. It was established by Adanson, and named in honor of a Roman botanist, but was united to *Chironia* by Linnaeus, to which in fact it is closely allied, but has again been separated under its former name by more modern botanists. All the species, however, are bitter and tonic, but only one is officinal. It is to be preferred to the European *Centaury*, as the flowers as well as the leaves are active. It has long been known and employed as a domestic remedy, and is also generally admitted in regular practice, where a pure and simple bitter is required. The plant is of easy culture, and flowers in August and September.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

THE *SABZATIA ANGULARIS* affords an intense, pure, and strong bitter, which property is communicated both to alcohol and water, which, in sufficient quantity, extract the whole of its active principles, leaving the insoluble part insipid. It appears to contain a bitter resin and mercurin, and is devoid of astringency, and almost without any aroma. The plant is

almost inodorous, but the petals, leaves, and stalk have an intensely bitter taste. The root has a slight aromatic smell, and does not tire the digestive organs.

Before the Peruvian bark *Cinchona* was discovered or known, *SARBATIA ANGULARIS* was long used for the cure of fevers, and was one of the ingredients of the long celebrated *Portland powder*. It is still a very popular remedy throughout the United States in all kinds of fevers, remittent, nervous, typhus, and even yellow fever, and may be used in every stage.

Centaurry is justly considered one of the most efficacious bitters indigenous to the United States, and is certainly a good substitute for the English Gentian, which it very much resembles in taste, and to which it is quite an equivalent. It is a good stomachic, emmenagogue, febrifuge, and vermifuge. The property resides principally in the extractive principle. It is generally administered in febrile diseases throughout the country, and employed by respectable practitioners in preference to the small Centaurry, *CHIRONIA CENTAURIUM*. In domestic practice it is also much used as a prophylactic against autumnal fevers. The most usual way to take it is in cold infusion, strong, and in large and repeated doses.

The following is, perhaps, the most useful tincture of this justly esteemed popular plant. Take four ounces of the flowers and leaves of *SARBATIA ANGULARIS* and one ounce of bruised orange-peel, infuse them in two quarts of brandy for two weeks. One tablespoonful of this tincture, taken before breakfast and dinner, will create an appetite and promote digestion; and in dyspeptic complaints generally, this is a very useful bitter and tonic, and may well supply the place of some of the more expensive remedies of this description. Children troubled with worms may take two teaspoonfuls or more every morning, which will effectually destroy them. To prevent intermittent fevers, and to cure them, a wineglassful of the tincture, with twenty drops of elixir vitriol in it, may be taken twice a day on an empty stomach.

In fevers, a tea made of two ounces of the flowery tops of Centaurry, and a handful of balm, in two quarts of soft water, may be drank five or six times a day.

In order to assist female weaknesses, pour two quarts of boiling water on two ounces of the tops, and set the vessel over the coals for half an hour; strain it, and add a pint of rum to the strained liquor. Dose, a teaspoonful four times a day; bathe the feet in warm water, and set over the fume of a hot decoction of catnip, pennyroyal, &c.

In powder, the dose is from ten to twenty grains. Wine is a good vehicle for it, a wineglass being a dose. All the species of the genus *SARBATIA* are medicinal, and nearly equivalents, although the plant under consideration is the strongest and most bitter.





No. 11

CORNUS FLORIDA

Flowering Dogwood.

— A. J. C. 1847

THE HISTORY OF

THE REIGN OF

CHARLES THE FIRST

BY

JOHN BURNET

OF THE UNIVERSITY OF OXFORD

IN TWO VOLUMES

THE FIRST

VOLUME

FROM THE ORIGINAL MANUSCRIPTS

IN THE POSSESSION OF THE UNIVERSITY OF OXFORD

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JOHN BURNET

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IN TWO VOLUMES

THE SECOND

VOLUME

FROM THE ORIGINAL MANUSCRIPTS

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CORNACEÆ.

The Dogwood Family.

No. 17.

CORNUS FLORIDA.

Dogwood. Bozewood.

Geog. Position. North America.

Quality. Bitter.

Power. Astringent, tonic, slightly stimulant.

Use. Fevers, typhus, febrile disorders.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER CORNACEÆ.

Linnean Classification.

CLASS IV. *Tetrandria.* ORDER Monogynia.

Authorities.—Lin. Sp. Pl. 171. Willd. Sp. Pl. 1. 661. Pursh. Flor. N. A. 198. Lindl. Proc. Med. Soc. 81. Hooker, Bot. Beech. II. 71. Benth. Lec. 118. No. 132. Barton, Veg. Mat. Med. 1. 44. Raf. Med. Flor. II. 131. U. S. Disp. 286. Ex. Disp. U. S. 141. Karst. Bot. 42, 278. Loud. Encyc. Pl. 107. Rafinesq. and Gussone, Mat. Med. 202. Persoon, El. Mat. Med. II. 764. Griseb. Med. Bot. 247. Carrot. Hist. Med. Bot. 1. 50. Gray, Bot. N. U. S. 158. Donch. Fam. Pl. 652. Howard, Bot. Med. 217. Karst. Mat. Med. 426. Wood, Class-Book, 297.

GENUS CORNUS.

From Lat. *Cornu*, a horn; the wood being considered as hard and durable as horn. The Romans constructed musical instruments with it; *luna bella cornu*, says Virgil.

Synonymes.—Schlehdendler, Hartwegi (Ger.). *Men-fu-cun* et *tau-acki* and *Hat-ti-wa-ao-mu-acki* (Delaware Ind.).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* adherent to the ovary, the *limb* minute, four or five-toothed or lobed.

COROLLA. *Petals* four or five, distinct, alternate with the teeth of the calyx.

STAMENS. Of the same number as the petals, and alternate with them.

Ovary. One or two-celled.

FRUIT. A baccate drupe, crowned with the calyx.

SEEDS. Not solitary.

THE SECONDARY CHARACTERS.

CORNUS. *Calyx* four-toothed, segments small. *Corolla* four-petalled, oblong, sessile. *Stamens* four. *Style* one. *Drupe* baccate, with a two or three-celled nucleus. *Involucere* four-leaved or wanting.

Calyx four-toothed. *Drupe* with a two-celled nut. Some species have a four-leaved involucere.

THE SPECIFIC CHARACTERS.

CORNUS FLORIDA. *Arboreous.* *Leaves* opposite, ovate, acuminate, entire. *Flowers* small, in a close, cymose umbel or head, surrounded by a very large, four-leaved, obcordate involucere.

Leaves ovate, acuminate. *Involuceral* leaves four, rarely five or six, very large, somewhat obcordate. *Fruit* ovate.

THE ARTIFICIAL CHARACTERS.

CLASS TETRALINEÆ. *Stamens* four. **ORDER MONOGYNIA.** *Ovary* inferior. *Polypetalous* or *apetalous.* *Straw* (one species herbaceous). *Fruit* a baccate drupe.

NATURAL HISTORY.

THE **CORNUS FLORIDA** is a handsome tree, common throughout the United States, enlivening the woods in the spring by a profusion of large white blossoms, and bearing in the fall clusters of beautiful scarlet berries. In Louisiana, it blossoms in February, in the Middle States in April and May, and more northerly in June. It continues a fortnight in full bloom, and, according to the Indians, it everywhere indicates when the Indian corn or maize is to be planted. It is the largest tree of its genus, and sometimes attains to the height of thirty or thirty-five feet, and a diameter of nine or ten inches. Usually, however, it is only eighteen or twenty feet high, by four or five inches in diameter.

The tree is accurately described by Michaux the younger, in his elegant work on the forest-trees of North America. The trunk is strong, invested with a rough, blackish bark, which is tolerably thick, and very much separated into fissures or cracks. The branches are numerous, spreading, and disposed regularly, being sometimes opposite to each other, and occasionally arising by fours. The younger branches take a semicircular direction upwards. The leaves are about three inches in length, opposite, oval, entire, acuminate, slightly

glaucous or whitish underneath, and presenting on their upper surface many conspicuous ridges. About the end of summer they become speckled with black dots, and on the approach of winter turn to a dull red color. The flowers are terminal on the little branches, small, of a greenish-yellow color, and aggregated in numbers. They are garished with an involucre from three to four inches large, which surrounds them. This involucre is composed of four large obcordate foliicles, of a fleshy or coriaceous texture. They are white, and sometimes tinged with violet. The outer extremity of each foliicle is notched, having the appearance of disease or injury. The notches are purplish or dusky rose-colored. The calyx is monophyllous, small, and four-toothed. It is deciduous, never continuing until the berries are ripe. The corolla is composed of four petals. The stamens are four in number, and equal. Pistil one, consisting of a roundish germ beneath. The style is filiform, and nearly the length of the corolla. Stigma obtuse. The flowers are succeeded by oblong berries, of a rich shining crimson or carmine color, always collected together to the number of three or four. They are ripe in September, and are eagerly devoured by different birds.

When Dogwood is in full flower, it is an exceedingly magnificent and strikingly beautiful tree, very ornamental to the forest, and more so from the early period of its flowering. The tree grows very slow, and the wood is hard, compact, heavy, and durable; it is white outside and chocolate-color in the centre, taking a very fine polish. It may be used like Boxwood, and when stained of a light yellow color, resembles it altogether. All kinds of tools and instruments are made with it. It is likewise much used by cabinet-makers and joiners for ornamental work.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

By analysis, *Cornus florida* is found to contain, in different proportions, the same substances as *Cinchona*, having more of gum mucilage, extractive, and gallic acid, and less of resin, quinine, and tannin. The quinine of the *Cornus* has been called *Corvinae*. It has all the properties of the genuine sulphate of quinine, but very little is afforded. The double distilled water of *Cornus* is lemon-color; that of *Cinchona* is reddish. From a summary of experiments, it appears that Dogwood and Peruvian bark possess the same ingredients, — gum, mucilage, and extract, and that the last contains the

gallic acid and tannin, though in different proportions. The Dogwood possesses most of the gum, mucilage, and extract, and the Peruvian bark the most resin. The extract and resin possess all their active virtues, the extract all their tonic power. The resin, when separated from the extract, is a stimulant only, and probably the tonic power of the extract is increased when combined with the resin, as in the spirituous tincture.

The extract of Dogwood is less bitter and more astringent than that of the best Cinchona, but preferable to that of the inferior kinds. This extract contains all the tonic properties; the resin alone is merely stimulant. The similarity between Dogwood and Peruvian bark in their sensible qualities, their chemical analysis, and their action on the living and dead fibre, sufficiently prove an identity in their medicinal effects; and actual experiments with the bark of the *Cornus florida* entitle it to be ranked among the best tonics of our country. Professor Barton says, "that it may be asserted with entire safety, that as yet there has not been discovered within the limits of the United States any vegetable so effectually to answer the purpose of the Peruvian bark in the management of intermittent fevers as the *Cornus florida*." Although Dogwood is a good substitute for Peruvian bark, yet it is evidently different in some respects; the powdered bark quickens the pulse, and sometimes produces pains in the bowels, but the sulphate of Cinchona and the extract are not so stimulant. They are used in intermittent and remittent fevers, also typhus and all febrile disorders. The dose of the powder is from twenty-five to thirty-five grains, often repeated.

In cases of debility, the *Cornus florida* acts as a corroborant; it may be joined in practice with Gentian, Colombo, Chamomile, Liriodendron, Seneca-root, &c. In some parts of the country the inhabitants often use it in decoction, and even the twigs are chewed as a prophylactic against fevers. The Indians use a warm infusion of the flowers for fevers and colics, and hence it may be inferred that these possess the same tonic property as the bark.

The wood of the *Cornus florida* is much used by dentists in the insertion of artificial teeth, and the young branches, stripped of their bark, and rubbed with their ends against the teeth, render them extremely white. The Crookes of the West India Islands are in the constant practice of substituting the Dogwood twigs for a shrub common among themselves, in cleansing their teeth. The striking whiteness of their teeth, universally acknowledged, is proof of the efficacy of the practice. The application of the juice of these twigs to the gums is also useful in preserving them hard and sound.

A decoction of the bark of Dogwood has been employed by farmers with good effect, in a malignant fever among horses, called yellow water, Canada distemper, &c.



Nº 15.

MAGNOLIA GLAUCA,

Small Magnolia

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MAGNOLIACEÆ.

The Magnolia Family.

No. 18.

MAGNOLIA GLAUCA.

SMALL OR LAUREL MAGNOLIA. *Sweet Bay.*

Geog. Position. United States.

Quality. Bitter.

Power. Tonic, stimulating.

Use. Chronic rheumatism, typhoid and intermittent fevers.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER MAGNOLIACEÆ.

Linnean Classification.

CLASS XIII. Polycandria. ORDER Polgynia.

AUTHORITIES. — *Linn. Sp. Pl.* 663. *Willd. Sp. Pl.* II. 1255. *Pursh, Flor. N. A.* 251. *Lindl. Flur. Med.* 122. *Hughes, Med. Bot.* II. 61. *Barton, Lec.* 294, No. 354. *Bertron, Vég. Méd.* II. 77. *Bot. Méd. Flur.* II. 31. *U. S. Disp.* 429. *Ec. Disp. U. S.* 235. *Ramon, Bot.* 87, 312. *Loud. Encyc.* Pl. 478. *Bollard and Garrod, Mat. Méd.* 349. *Townson, Tr. Mat. Méd.* II. 743. *Griff. Med. Bot.* 30. *Carson, Rhét. Méd. Bot.* I. 103. *Gray, Bot. N. C.* 8, 17. *Honey, Med. Herb.* 234. *Kent, Mat. Méd.* 479. *Wood, Class-Book.* 159.

GENUS MAGNOLIA.

Named by Plancher, in honor of Professor Pierre Magnol, physician and botanist, of Montpellier, France. Author of *Botanicum Montpelierense*, 1676.

SYNONYMS. — *Le Magnolier glauque* (Fr.), *Grüne Magnolia* (Ger.), *Die eben grüne Magnolia* (Druck), *Molais Komani* (Jap.)

THE ESSENTIAL CHARACTERS.

CALYX. Sepals three - six, deciduous, colored like the petals.

COROLLA. Petals six - twelve, hypogynous, in several rows, imbricate in aestivation.

STAMENS. Indefinite, hypogynous, distinct, with short filaments, and adnate anthers.

OVARY. Several, in many rows, upon an elongated torus.

FRUIT. Follicular or baccate, one - two-seeded.

SEEDS. Attached to the inner surface of the carpels, from which they are suspended by a long, delicate funiculus.

THE SECONDARY CHARACTERS.

MAGNOLIA. Sepals five, often wanting or petaloid. Petals six—twelve, caducous. Carpels two-valved, one—two-seeded, imbricated into a cone. Seeds laccate, subcordate, and suspended, when mature, by a long funiculus.

Calyx three-angled. Corolla six or nine parted. Carpels numerous, imbricate in a circle-like spike, two-valved. Seeds arched pendulous on long cords, berry-like.

THE SPECIFIC CHARACTERS.

MAGNOLIA GLAUCA. Leaves oval, glaucous beneath. Petals obovate, tapering to the base. Flowers terminal, white, solitary, of three sepals and several concave petals.

Leaves oval, glaucous beneath. Petals obovate, tapering to the base.

THE ARTIFICIAL CHARACTERS.

CLASS POLYANDRIA. STAMENS twenty or more, arising from the receptacle. (Hypogynous.) **ORDER POLYGNIA.** Leaves never peltate. Trees with large, showy flowers.

NATURAL HISTORY.

THE **MAGNOLIA GLAUCA**, though in general a small tree, in the Southern States sometimes attains the height of forty feet, and a diameter of twelve or fourteen inches. Its most common height is from twenty to thirty feet, though it is frequently found flowering luxuriantly when it has reached a height of five or six feet only. In the New England States, clusters of this Magnolia, in full flower, may be seen, the largest individual among which does not exceed four feet in height, and all of them are much more deserving the appellation of bushes, or shrubs, than trees. The variation in the height of this species is much influenced by local exposure and peculiarity of soil. Trees of the greatest discrepancy in stature, but precisely alike in respect to the size of the leaves, flowers, and fruit, sometimes occupy almost the same ground. The difference in these instances appears merely owing to accidental situation, the small ones occupying the shady thickets, and the taller trees the skirts of woods.

The trunk is covered with a smooth, grayish bark, is tortuous, and much divided into divaricating branches. The wood is whitish, and very light. The leaves are five or six inches long, and alternately disposed on the branches. They are of a long, oval form, entire, thick, opaque, of a deep yel-

lowish-green color on their upper surface, and glaucous or bluish-white underneath. This agreeable green, relieved by the frequent presentation of the blue under-side, exhibits a pleasing contrast in the leaves. Though at all times the foliage of this tree is beautiful, it appears to much more advantage during the inflorescence, from the harmony of coloring produced by the handsome, cream-colored flowers. The leaves fall in the autumn of every year, and are reproduced in the spring, at which season they are of a much lighter color than when further advanced. The flowers are terminal and solitary, and about the size and shape of half a goose's egg. They are composed of many oval, concave, cream-colored petals, and exhale a subtle, bland, and to most persons delicious odor. To some persons it is rather unpleasant, and to a few, insupportable, producing uneasiness in the chest, and a tendency to fainting. The flowers are succeeded by little fleshy, squamous cones, about an inch in length, and three quarters of an inch in diameter. They are of a green color, with occasionally a tinge of red. Each cone is composed of numerous cells of about twelve or eighteen lines in length. They contain the seeds, which are of a bright scarlet color. They force their way, when matured, by rupturing, longitudinally, the sides of their chambers. Previously to falling, they are suspended for some days, by a delicate white, filamentous thread, just below the base of the cone, and by their contrast with the green, scaly strobile, produce a very pleasing effect. The seeds are about the size of a grain of Guinea-corn, irregularly roundish, and somewhat narrowed above.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

From the result of the chemical analysis of *MAGNOLIA GLAUCÆ*, by several eminent chemists, it appears to contain a bitter extract, resin, and camphor. The medical properties, in the order of their strength, are the bark of the root, bark of the trees, and the cones, buds, and leaves. The taste is bitter, aromatic, and with scarcely any astringency. The plant evidently belongs to the class of tonic bitters, and is one of the most important articles of this useful set of medicines.

The smell of the *Magnolia* is pleasant and agreeable, somewhat similar to *Laurus*, *Acorns* and *Benzoin*, fugacious, but soon lost in the dried bark. It is tonic, stimulant, diaphoretic, and stomachic.

The genus *Magnolia* includes about ten American species, and probably as many Asiatic. As medicine, they are all in-

discriminately used, and are considered fully equal to *Liriodendron*, *Cascarilla*, *Cornus*, &c. The Southern Indians call it *Iroasco*, which means *royal tree*; and they considered it the emblem of peace, much in the same manner that the Olive is regarded. They valued the plant very highly, and on account of its celebrity as a remedy for rheumatism and fevers, they annually resorted to the river Kenhawa, where this *Magnolia* grows in abundance, to collect the bark.

The tincture of the fresh bark and cones is one of the best preparations; it is of considerable avail in intermittents of an atonic nature, and equal to *Cinchona*; in typhoid fevers it has also proved of very great advantage, but especially its good effects are apparent in chronic rheumatism. Dr. Barton mentions, that in inflammatory rheumatism it produced considerable relief by its sudorific effects after blood-letting.

The cones, infused in spirituous liquors, are a popular stomachic. The liquor of this infusion imbibes a very bitter taste, and is considered a good prophylactic against autumnal fevers. It is variously and very generally employed among the country people where it grows, and this circumstance evinces the probability that it is frequently found efficacious.

The decoction of the bark of the trunk affords a hard, black, friable, gummy, resinous extract, and is said to be useful in diarrhoea, cough, pthysis, fever, hemorrhoids, autumnal fevers, and internal pains. A decoction of the young branches is effectually employed in catarrh and coryza; it is a gentle cathartic, and terminates its operation by acting as a sudorific.

The powdered bark forms an agreeable, aromatic tonic-bitter, which has been used in intermittents with considerable success. It may be given in doses of a drachm, four or five times a day, or in decoctions and infusions, which may be taken to any extent the stomach will bear.

Like most vegetables endowed with aromatic, bitter properties, the *MAGNOLIA GLAUCA* is sometimes employed in the preparation of spring bitters. The practice of taking this description of bitters as by no means here recommended, but among the different articles used for this purpose, perhaps there is none more likely to act healthfully than this. The cones and seeds are not unfrequently used together, but the seeds alone form the most elegant and pleasant bitter. They should be infused in the best of spirits, and digested in the sun a day or two.

An ointment made of the carbonized wood of this *Magnolia* and hog's lard is good for ulcers, imposthumes, wounds, or bruises. It should be spread on rag or silk, as an external covering to the dressing on lute where a tow-plaster cannot be conveniently used, as in wounds of the face and hands, a bubo, or any other sore where an external plaster cannot readily be retained in its situation by a bandage.



Nº 10.
CORNUS SERICEA.
Red Dogwood - Swamp Dogwood.

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OF GREAT BRITAIN AND IRELAND

Part. A biocate drupe, crowned with the calyx.

SEEDS. Not solitary.



N. 10
CORNUS SERICEA.
Red Dogwood, Swamp Dogwood

CORNACEÆ.

The Dogwood Family.

No. 19.

CORNUS SERICEA.

RED OSIER. Swamp Dogwood.

Geog. Position. North America.

Quality. Bitter.

Power. Astringent, tonic, slightly stimulant.

Use. Fevers, typhus, febrile disorders.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER CORNACEÆ.

Linnean Classification.

CLASS IV. *Tetrandria.* ORDER *Monogynia.*

Authorities.—WILLD. Sp. Pl., I. 663. PANK. Fl. N. A. 169. LINDL. Fl. Med. 91. BARTON, Loe. 118, No. 233. BARTON, Veg. Mat. Med., I. 125. Ital. Med. Plur., I. 121. U. S. Disp. 287. Ec. Disp. U. S. 143. EMMET, Bot. 42, 208. LOND. Encyc. Pl. 192. PERCIV. El. Mat. Med., II. 763. GRIF. Med. Bot. 343. GRAY, Bot. N. U. S. 167. KOE, Mat. Med. 429. WOOD, Class-Book, 296.

GENUS CORNUS.

From Lat. *Cornus*, a horn; the wood being considered as hard and durable as horns. The Romans constructed warlike instruments with it, *cornu bellicum*, says Virgil.

Synonymes.—Schänkeibinder, Hartigst (Ger.), Man-ho-can-ai-min-ohi and Hata-wa-ka-ah-ohi (Delaware Ind.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals adjacent to the ovary, the limb minute, four or five-toothed or lobed.

COROLLA. Petals four or five, distinct, alternate with the teeth of the calyx.

STAMENS. Of the same number as the petals, and alternate with them.

OVARY. One or two-celled.

FRUIT. A baccate drupe, crowned with the calyx.

SEEDS. Not solitary.

THE SECONDARY CHARACTERS.

CORNUS. *Calyx* four-toothed, segments small. *Covelia* four-petalled, oblong, sessile. *Stamens* four. *Style* one. *Drupe* baccate, with a two or three-celled nucleus. *Involute* four-leaved or wanting.

Calyx four-toothed. *Drupe* with a two-celled sat. Some species have a four-leaved involucre.

THE SPECIFIC CHARACTERS.

CORNUS SERICEA. Branches spreading. Branchlets woolly. Leaves ovate, rounded at the base, acuminate, ferruginous, pubescent beneath. Cymes depressed, woolly. Drupe a bright blue.

Branches spreading. Branchlets woolly. Leaves ovate, acuminate, rounded at the base, rusty-pubescent beneath. Cymes depressed, woolly.

THE ARTIFICIAL CHARACTERS.

CLASS TETRANDELL. STAMENS FOUR. ORDER MONOCYNEA. Ovary inferior. Polypetalous or apetalous. Shrubs (one species herbaceous). Fruit a baccate drupe.

NATURAL HISTORY.

THE **CORNUS SERICEA** is a native of this country, and is usually from six to eight feet in height. The stems are numerous, straight, and covered with a shining reddish bark. The root is ligneous, branched, of a light grayish color, and smells somewhat like liquorice-root; the radicles are reddish. The stem is erect, cylindrical, and branched. The branches are opposite, roundish, spreading, and of a dingy purple color. The young shoots are round, ringed, nearly without spots, and of a dark purple color, the very young ones more or less pubescent. The leaves are opposite, petiolated, ovate, pointed, entire on their margins, nerved, and somewhat veined, having the middle rib and nerves projecting underneath and sunk above. The under surface of the leaves, particularly near the costa and nerves, is covered with a dense, brownish, villous coat. The young leaves are doubled by the approximation of their sides; when full-grown, they are plain, as represented in the largest leaf of the engraving. They vary in size, but in general, when mature, they are three inches long and an inch and a half broad. The petioles are one fourth the length of the leaves, round below, with a slight furrow above, villous and purplish. The flowers are borne in cymes, which are terminal, pedunculated,

erect, flat above, or occasionally a little convex. The expanded flowers of each cyme are not very numerous. Calyx monophyllous, four-toothed, villous; the teeth are linear, acute, spreading, persistent, about two lines broad. The corolla consists of four linear, acute, spreading petals, larger than the calyx. The stamens are four, erect, diverging, filaments scarcely longer than the corolla. The anthers are peltate, oblong, and of a yellow color. Pistillum greenish, below globose, pitcher-shaped, and villous. Style filiform, hardly shorter than the stamens. Stigma capitate and pubescent. The fruit consists of a collection of berry-formed, globular, fleshy drupes, of a beautiful cerulean-blue color. Each berry is excavated at the base, white within, one-locular. Seed a roundish, compressed, nerved, two-celled nut.

The geographical range of the Red Osier, or Swamp Dogwood, as commonly called, is extensive. It inhabits most thickets, the borders of swamps, rivers, creeks, and rivulets. Its common companion, the *Cornus stricta*, resembles it exceedingly, and may be easily confounded with it. It flowers in June and July, and ripens its berries in September.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The medicinal virtues of the *Cornus stricta* are the same as those of the *Cornus florida*, and both are allied, in their effects, to the Peruvian bark. The Red Osier is, therefore, a stimulant and tonic, and may be used in powder or in tincture, with proof spirits. About a scruple and a half, and from that quantity to a drachm of the former, may be given at a dose, and repeated three or four times a day. The usual proportions of the spirituous tincture may be used. The pulverized bark of the Swamp Dogwood is not so popular as that of the Dogwood, but it is certainly not less deserving the attention of practitioners, particularly as the difficulty of procuring genuine Peruvian bark is so well known.

The comparative experiments of Dr. Walker, as to the properties of the Peruvian bark and these two species of *Cornus*, have produced results highly favorable to these articles.

From the chemical investigation of the properties of the *Cornus*, it appears (*Dr. Walker's Inaugural Dissertation*, pp. 24, 25) that, upon distilling equal quantities of the pulverized bark of the root of *Cornus florida* and *Cornus stricta* and of red Peruvian bark, a fluid was obtained from the latter differing from that procured from the two former in no respect but in possessing a flavor, not aromatic, but peculiar to the bark. The fluid was clear and transparent. It appears fur-

ther, that, upon subjecting these materials to a second distillation, the fluids obtained had a more disagreeable smell than those from the first, and a taste somewhat acerb. The fluid yielded by the Corni acquired a lemon-color, that from the Peruvian bark was tinged with red. The following results are given by Dr. Walker, of the changes which took place upon testing these different fluids. The fluids distilled from

With Lemon-juice.		Oxycephalus.	Act. Leat.	With Almond.
The Corn. Bor.	Bol.	Black.	Prociplatic.	Effervefcence.
Corn. Ind.	do.	do.	do.	do.
Corn. Peru.	do.	Brown.	do.	Slight do.

The inference deduced from this experiment is, that gallic acid is contained in the three substances used, and that it exists in greater quantity in the Corni than in the bark. The gallic acid also comes over in distillation in an uncombined state. A decoction of the bark of the root of *Cornus florida* yields, by evaporation, a gum-like mass. Two drachms of this gum were obtained from seven and a half ounces of the decoction. With a view to ascertain the constituent parts of this mass, two drachms in successive quantities of alcohol were macerated until the last portion ceased to be changed in color and taste; this, like the former portions, was separated from the gum by the filter; after the gum was dried upon the filter, it was collected, and weighed only half a drachm. The dried gum was then dissolved in a small quantity of water. The solution was imperfect, not transparent nor bright-colored; it possessed no particular taste which might not be ascribed to its viscid consistence, and it produced no change of color with a solution of the oxysulphate of iron. Suspecting, from the want of transparency, that there might be some mucilage in the solution, diluted sulphuric acid was added in small portions to the solution, a precipitate slowly fell to the bottom in a coagulated form. When the precipitation had ceased, it was separated from the solution and evaporated to dryness at the same time with the solution. By weighing each residuum, the mucilage was detected in the proportion of three to five, that is, eighteen grains of gum and twelve of mucilage. Observing the solution to turn dark by the acid, it was inferred that the want of transparency in the gummy solution was not entirely owing to the presence of the mucilage, but to the fine powder of the medicine which the viscosity of the fluid suspended and concealed, and probably the change of color noticed above was owing to the carbonation of these particles by the acid. The *Cornus florida* contains more extract and gum than the Peruvian bark, and is more soluble in water, while the latter, containing more resin, is more easily soluble in alcohol. The powder of the bark of *Cornus florida* is more miscible in water than that of the *Cinchona*, for the same reason.



Nº 20
SYMPLOCARPUS FÆTIDUS
Shank Cabbage



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ARACEÆ.

The Arum Family.

No. 20.

SYMPLOCARPUS FÆTIDUS.

SKUNK CABBAGE. *Meadow Cabbage.*

Geog. Position. American.

Quality. Fœtid.

Power. Stimulant, antispasmodic, expectorant.

Use. Asthma, whooping-cough, nervous irritability.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER ARACEÆ.

Linnean Classification.

CLASS IV. *Tetrandria.* ORDER *Monogynia.*

Authorities.—*Lin. Sp. Pl.* 1177. *Link. Flor. Med.* 604. *Engelm. Med. Bot.* II, 41. *Barton, Loc.* 281, 282-283. *Barton, Vert. Nat. Med.* 1, 122. *Ref. Med. Flor.* II, 115. *U. S. Disp.* 303. *Ec. Disp. U. S.* 219. *Faxon, Bot.* 43, 452. *Griff. Med. Bot.* 453. *Gray, Bot. N. U. S.* 447. *Emch, Fl.* 19, 435. *Howard, Bot. Med.* 236. *Henry, Med. Herb.* 120. *Kost, Mat. Med.* 459. *Wood, Class-Book.* 527.

GENUS SYMPLOCARPUS.

From the Greek, *συμπλοκ*, common, *αγρία*, wild. Nuttall adopted this generic term, imposed by Salisbary, but *Ichneumon fœtidus*, *Alydon Potamoxyloides*, *Melasma*, are also frequently used.

Synonymy.—*Stuckardt Zelkowitz* (Ger.).

THE ESSENTIAL CHARACTERS.

CALYX. Mostly ochlimydeous and monadelphous, arranged upon a naked or spathaceous spadix.

COROLLA. Perianth, when present, consisting of four- or six parts.

STAMENS. Definite or indefinite, hypogynous, very short. *Anthers* ovate, extrorse.

OVARY. Free, one- or several-celled. *Stigma* sessile.

FRUIT. Berry succulent or dry.

SEEDS. Solitary or several, with fleshy albumen.

THE SECONDARY CHARACTERS.

SYMPLOCARPUS. *Spadix* verticillate. *Spadix* oval, covered with perfect flowers. *Perianth* deeply four-parted. *Segments* emarginate, cuneate, truncate, persistent, becoming thick and spongy. *Berries* globose, two-seeded, imbedded in the spadix.

General color a spathe. Spadix simple, covered with flowers. *Perianth* corolla-like, deeply four-parted, persistent, becoming thick and spongy. *Style* pyriform, four-sided. *Stigma* simple, minute. *Berries* globose, two-seeded, included in the spongy spadix-remains.

THE SPECIFIC CHARACTERS.

SYMPLOCARPUS FORTISUS. *Leaves* cordate-oval, acute. *Spadix* sub-globose, preceding the leaves.

Stemless. Leaves radical, heart-ovate, very large. *Spadix* supporting the flowers in a sub-globose head.

THE ARTIFICIAL CHARACTERS.

CLASS TETRANDREA. *Stamens* four. **ORDER MONOGYNIA.** *Ovary* superior, apetalous, endogamous. *Flowers* in a spadix. *Odor* fetid.

NATURAL HISTORY.

SYMPLOCARPUS FORTISUS is a common plant, growing in swamps, meadows, and ditches, renowned for its odor, which is scarcely less offensive than that of the animal whose name it bears. It is remarkably volatile, and cannot be retained by any menstruum. The plant is exclusively a native of North America, and delights in shade. It seldom appears sporadically, and where found at all, it is generally abundant. A very humid and rich soil is necessary to its luxuriant growth.

The plant is subaquatic, flowering and leafing from the root, which consists of a vast number of verticillate cylindrical fibres, many of which are near a fourth of an inch in diameter. They diverge from their point of cincture, and penetrate the earth or mire to the depth of two feet, and sometimes more. The fibres are whitish, colored with brownish-red rings.

The flowers appear before the leaves, or at least when these make their appearance they are closely convoluted. The leaves are preceded by colored sheathing stipules, and about the end of April or beginning of May are fully developed, when they are very large. They are commonly twelve, fifteen, and eighteen inches long, and nine or ten broad; they are sometimes even, in favorable situations, more than two feet long, and twelve inches broad. They are oblong-ovate,

heart-shaped, at the base smooth, strongly veined, and have a large prominent middle rib projecting below.

The flowers are concealed in a singular spongy, ovoid spathe, acuminate and depressed obliquely at the apex, and auriculate at the base. These spathes have the appearance of, and are not unaptly compared to, some kinds of skulls. Upon opening them, the flowers are found situated upon a globose pedunculated spadix. They are destitute of petals, have a four-parted calyx divided at the base. Segments hooded, flattened, and notched at the apex. There are four stamens situated opposite to the divisions of the calyx, having flat, awl-shaped filaments, with short, oblong anthers. The style is thick and four-sided, stigma shorter than the stamens. The seeds are numerous, large, naked, irregularly roundish, and speckled with purple and yellow; they are immersed in a large spongy receptacle near to the surface.

Botanists have had some difficulty in properly arranging this plant. It is attached by Willdenow to the genus *Drosera*, by Michx. and Pers. is considered a *Potamo*, and by American botanists has been erected into a new genus, which Nuttall calls *Symplocarpus*, after Salisbury, and for which Dr. Bigelow has proposed the name *Idioses*, expressive of the odor of the plant. The term *Symplocarpus*, though erroneous in its origin, was first proposed for the new genus, and having been adopted by several botanists, should be retained.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Every part of this curious plant, even the seeds, is strongly imbued with the peculiar alliaceous odor, which has given rise to the vulgar name expressive of the obnoxiousness of the plant. The odor emanating from the broken spathe and the unopened seeds resembles the smell of asafetida. The leaves have, perhaps, a more disagreeable smell than any other part of the plant. Their odor has been compared to that thrown off by the skunk, or polecat, and like that, it may be perceived at a considerable distance. The smell from the spathe and flowers is pungent and very subtle; they possess a great show of acridity. The pungency of the plant is probably concentrated and increased by being shut up and confined in a close room; but in the open air *Symplocarpus verticillatus* has certainly no pernicious effect, and the ridiculous tales of its deadly influence on those who approach it have no better foundation than the weakness and credulity of mankind.

Various experiments seem to show that this plant contains a volatile acid principle, readily dissipated by heat, a resinous substance, and a gummy or mucous principle. The seeds contain a considerable quantity of fixed oil. The root, as well as every part of the plant, possesses very powerful antispasmodic powers, similar to those of *asafoetida* and other fetid gums. It has been highly recommended as a palliative in spasmodic asthma, and it is reputed to have effected very considerable relief, when other means had failed. Thirty or forty grains of the dried pulverized roots are recommended to be given during the paroxysm, and repeated as often as circumstances may require. After the fit has gone off, it is necessary to persevere in the use of the medicine; its continuance is recommended till the patient is entirely cured. This practice is said to be imitated from that of the Indians (who call this plant *shoka*) in their treatment of this complaint.

Two teaspoonfuls of the powdered root of this plant, given in spirits and water, have procured immediate relief in cases of violent hysteria, after the ordinary remedies for such affections, musk, and other antispasmodics, had been ineffectually tried. On repeating the use of the medicine, it afforded more lasting relief than any other remedy had given. It has also afforded very considerable benefit in chronic rheumatism, in wandering spasmodic pains, in whooping-cough, and in chronic coughs of patients having a cold and phlegmatic habit. In spasmodic affections of the abdominal muscles during parturition, or after delivery, this root is of great advantage, and has proved very beneficial.

The bruised leaves are frequently applied to ulcers and recent wounds, with very good effect. They are also used as an external application in cutaneous affections, and the expressed juice of the leaves is successfully applied to different species of herpes. Among the people in the country the leaves are commonly used to dress blisters, with the view of promoting their discharge; for this purpose they are slightly bruised, by being laid on a flat board, and having a rolling-pin passed a few times over them to reduce the projecting mobile ribs, nerves, and veins, so as to enable every part of the leaf to come in contact with the surface of the blister. This plant is also strongly recommended in scurvy, as well as in all other diseases of the skin, in which the official *Wakrobin* has been very highly extolled and found useful.

As the active properties of *Symplocarpe* *varians* depend on a volatile principle, which is impaired by long keeping, especially in powder, it is better to preserve it in well-stopped bottles, cut up in slices, ready to pulverize when wanted. It is given in pills, or mixed with sirup, in doses of ten to forty grains, two or three times a day. Decoction, and all preparations of this plant with heat, greatly impair its virtues.



№ 21.

CASSIA MIRILANDICA.

America. Siam.

LEWIS MYNERS

The Elder Family

to R.

LEWIS MYNERS

London, 1841

The Elder Family
The Elder Family
The Elder Family
The Elder Family

THE ELDER FAMILY

The Elder Family

The Elder Family

The Elder Family

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The Elder Family

The Elder Family



MIMULUS SP.

LEGUMINOSÆ.

The Pulse Family.

No. 21.

CASSIA MARILANDICA.

AMERICAN SENNA. Wild Senna.

Geog. Position. United States.

Quality. Nauseous.

Power. Cathartic, deobstruent.

Use. Obstructions of the bowels, febrile diseases.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER LEGUMINOSÆ.

Linnean Classification.

CLASS X, *Decandria*. ORDER *Monogynia*.

AUTHORITIES.—*Lix.* Sp. Pl. 341. *Willd.* Sp. Pl. II. 324. *Link.* Flor. Med. 991. *Buglew.* Med. Bot. II. 135. *Barton.* Lec. 90. No. 148. *Barton.* Vrg. Mat. Med. I. 137. *Raf.* Med. Flor. I. 92. *Whitlow.* Med. Disp. 78. U. S. Disp. 192. *Ec. Disp.* U. S. 103. *Enon.* Bot. 58. 183. *Leach.* Ence. Pl. 345. *Hallard and Garret.* Mat. Med. 258. *Thomson.* Mat. Med. 896. *Pereira.* El. Mat. Med. 592. *Griff.* Med. Bot. 260. *Gray.* Bot. N. U. S. 133. *Howard.* Bot. Med. 228. *Henry.* Med. Herb. 261. *Kerr.* Mat. Med. 123. *Wood.* Class-Book, 426.

GENUS CASSIA.

From 77th 47, Genck, of the Hebrews and other Orientals. In the books of the Old Testament it occurs only, Psalms Afr. 3, 8, and may be referred without hesitation to the time of Solomon.

SYNONYMS.—*La Cassie* (Fr.), *Bohnhaut* (Ger.), *Pykasson* (Dutch), *Cassiover* (Dan., Swed.), *Polpa* & *Cassia* (It.), *Futalasia* (Sp.), *Assolia* (Arab.), *Sennam* (Suz.), *Korshoi* (Pers.), *Khyr Shahr* (Ara.), *Khyr Chahr* (Pers.), *Draaga* (Jav.), *Mentai* (Malay), *Sonai* (Beng.).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* generally five, more or less united, often unequal.

COROLLA. *Petals* five, papilionaceous or regular, perigynous.

STAMENS. *Diadelphous*, *monadelphous*, or distinct. *Anthera* versatile.

OVARY. Superior, single, simple. *Style* and *stigma* simple.

FRUIT. A *legume*, either continuous (one-celled) or (a *loment*) jointed into one-seeded cells.

SEEDS. Solitary or several, destitute of albumen.

THE SECONDARY CHARACTERS.

CASSIA. *Sepals* five, scarcely united at base, nearly equal. *Petals* five, unequal, but not papilionaceous. *Stamens* ten, distinct; three upper anthers often sterile, three lower ones beaked. *Legume* many-seeded.

Calyx five-lobed. *Corolla* five-lobed. *Anthers* three, lower ones beaked, and on longer incurved filaments. *Legume* membranaceous.

THE SPECIFIC CHARACTERS.

CASSIA MARILANDICA. *Plant* smooth. *Leaflets* in six-*nine* pairs, oblong-lanceolate, mucronate, an obovate gland near the base of the common petiole. *Flowers* in axillary racemes and terminal panicles.

Somewhat glabrous. *Leaves* in eight pairs, lance-oblong, mucronate. *Flowers* in axillary racemes and in terminal panicles. *Legumes* linear, curved.

THE ARTIFICIAL CHARACTERS.

CLASS DECANDRIA. *Stamens* ten. **ORDER** MONOGYNIA. *Fruct* a legume. *Ovary* single and simple.

NATURAL HISTORY.

The generic name of this plant is of Asiatic origin, and was brought into Greece along with the commercial article which it denoted, by the Phœnician merchants. The specific appellation was given by Linnæus, in conformity with a common custom of which later discoveries have shown the impropriety, that of naming a new species of any genus from the particular place whence it was sent to him. Though the first specimens of *CASSIA MARILANDICA* were transmitted to Linnæus from the State of Maryland, the plant is now known to be common in almost every State of the Union south and west of New York. Inappropriate as the specific name is, however, it still does and always ought to stand unchanged.

This beautiful plant is frequently met with in alluvial soil, growing in close masses, with many stems, nearly smooth, upright, from three to six feet high, cylindrical and simple, leaves alternate, petioles compressed, channelled above, with an ovate and stipitate gland at the base, bearing from eight to ten pairs of folicles with short uni-glandular petioles, flowers of a bright yellow color, paniculate, although partly axillary and in short racemes, having each from five to fifteen flowers, calyx colored, with six oval, obtuse, and unequal seg-

ments, petals five, spatulate, the two lower ones larger, stamina with yellow filaments, germ deflexed with the lower stamens, and hairy, fruit pendulous, linear and flat pods somewhat hairy and blackish, from two to three inches long, and containing from twelve to twenty seeds.

This plant is sometimes found remote from water, though it delights in a low, moist, gravelly, or sandy soil, preferring the borders of rivers, creeks, and such watery places. It flowers from the last of June to the last of August.

The *CASSIA MARILANDICA* was introduced into England in 1723, and flowers there in August and October.

The naturalist has often reason to lament, that travellers and merchants have given the name of one thing, long known, to another recently discovered, on account of a real or fancied resemblance in a single particular, although in every other respect entirely different. Such has been the fate of *CASSIA*. The Romans used the wood with considerable latitude. When Virgil, extolling the simple fare of the husbandman, says, —

“*Nec cassia liquit corruptor arva olivæ*,”

he cannot be supposed to speak of the *Cassia* which he mentions in his second *Eclogue* as interwoven with the flowers of the violet, poppy, narcissus, and sweet-smelling anise, in the garland made for Alexis by the Nymph. In the former passage he undoubtedly alludes to the aromatic bark which the luxurious citizens of Rome infused in their table and culinary oil, to give it a grateful smell and flavor. In the latter, he must have intended some odoriferous herb or shrub, a native of Italy, but by what name now known is not easily determined.

“In the Middle Ages, the Arabian and Greek physicians, as appears from the writings of Avicenna and Myresena, acknowledged two kinds of *Cassia*, — one, *Cassia aromatica*, a native of India, the *Cassia* of the ancients; the other, *Cassia solitaria*, a native of Egypt, totally different in its general appearance, botanical characters, and medical qualities, and which appears to have been honored with the same name as that which from time immemorial had distinguished the precious Oriental spice, merely on account of its pleasant smell; for we are informed by Alpines, that when he was in Egypt, the latter part of the sixteenth century, the natives took great delight in walking early in the morning, in the spring season, near plantations of this kind of *Cassia*, and regaling themselves with the fragrance of its flowers. To this species and

its numerous congeners, the term *Cassia*, as a generic appellation, is confined by modern botanists." — ENCYC.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

CASSIA MARILANDICA is well known to be a very valuable cathartic of the milder class, and inferior in strength to the *Alexandria senna*. It is doubtless one of the most important of our indigenous medicines, but requires about one third more than the foreign article to produce an ordinary cathartic effect. Physicians very generally admit that they have exhibited it with the same success as the common *senna*, and it is very generally used by country practitioners as a substitute for the official article. The leaves alone have commonly been used, but the best method of employing the plant for medical purposes is to use the dried leaves and follicles, and carefully reject the leaf-stalks.

Senna is purgative, generally operating under four hours after it is taken, and is particularly adapted for children and very delicate women, and especially for all cases in which the bowels require to be certainly and moderately evacuated. In many habits it is sometimes apt to occasion griping, and therefore requires the addition of some aromatic, as caraway or cardamom seeds, or ginger, and its operation to be assisted by drinking plentifully of weak broths or gruel. The griping seems to be occasioned by the resinous matter, as the infusion made with water does not gripe, although it purges. The plant may be given in substance, powdered, but the more useful form is that of infusion. Decoction is a bad form, as the activity of the medicine is much impaired by the boiling, owing, according to some very respectable chemists, to the total dissipation of the nauseous and volatile principles; but, according to others, it is owing to the oxidization of the extractive, which also accounts for the severe gripings induced by the decoction. The dose of the powder of the leaves is from a scruple and a half to two drachms, and operates with mildness; the infusion is weaker, and the tincture is less available, though stronger.

The affinity of *CASSIA MARILANDICA* to two of the articles which constitute the *senna* of commerce, renders it probable that these foreign plants might be supplanted without difficulty and with great profit in our Southern States. An additional very powerful consideration in support of this hypothesis is the fact, that, since it appears *pure senna* is not to be obtained from Egypt, and that the adulterating plant or *CASSIA SENNA* is much inferior to our native species, the cultivation of the *CASSIA MARILANDICA* would afford a much purer *senna* than we now use, and at one fourth the cost of the imported article.



872.
GERANIUM MACULATUM.
Spotted Geranium (cranes bill).

growing in water

Water lilies

Water lilies

Water lilies

Water lilies



Water lilies

Water lilies

Water lilies

Water lilies

thrice as many as the petals.

Ovary. Composed of three united carpels, two-ovuled, alter-



GERANIACEÆ.

The Geranium Family.

No. 22.

GERANIUM MACULATUM.

SPOTTED GERANIUM. *Wild Cranesbill.*

Geog. Position. Europe, America.

Quality. Bitter.

Power. Astringent, tonic.

Use. Dysentery, cholera infantum, cynanche tonsillaris.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER GERANIACEÆ.

Linnean Classification.

CLASS XVI. Monadelphæ. ORDER Decandria.

Authorities.—Lin. Sp. Pl. 355. Willd. Sp. Pl. III. 505. Pursh, Flor. N. A. 448. Lindl. Flus. Med. 721. Bigelow, Med. Bot., I. 84. Barton, Inc. 165, No. 396. Barton, Veg. Mat. Med., I. 143. Raf. Med. Flur., I. 313. Whittow, Med. Enc. 133. U. S. Disp. 951. Ex. Disp. U. S. 188. Eaton, Bot. 74, 252. Lond. Encyc. Pl. 521. Pereira, El. Mat. Med. 363. Gray, Bot. N. U. S. 74. Beach, Foss. Pl. 537. Huxey, Med. Herb. 27. Ess. Mat. Med. 268. Wood, Class-Book. 196.

GENUS GERANIUM.

From Greek γέρων, a crane, the capsule and beak resembling the head of that bird.

Synonyms.—Le Geranium (Fr.), Der Storchschnabel (Ger.), Ojermanbek (Dutch), Storckenb (Dan.), Storknål (Swed.), Geranium (It.), Jernina (Sp.), Storchschnabel (Russ.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals five, persistent, veined, one sometimes sacate, or spurred at base.

COROLLA. Petals five, hypogynous or perigynous, angulate, revivation twisted.

STAMENS. Usually monadelphous, hypogynous, twice or thrice as many as the petals.

OVARY. Composed of three united carpels, two-ovuled, alter-

mate with sepals, upon an elongated axis, from which they separate in

FRUIT. Curving upwards on the persistent style.

SEEDS. Solitary, pendulous, without albumen.

THE SECONDARY CHARACTERS.

GERANIUM. *Sepals* and *petals* five, regular. *Stamens* ten, all perfect. The five alternate ones longer, and each with a nectariferous gland at its base. *Fruit* rostrate, at length separating into five, long-styled, one-seeded carpels. *Style* smooth inside, at length recurved from the base upward, and adhering by the point to the summit of the axis.

Calyx five-angled. *Covels* five-petalled, regular. Nectariferous glands five, adhering to the base of the five alternating long filaments. *Carpels* five, one-seeded, axoid, beaked at the elongated top of the receptacle. *Axis* naked or smooth within, straight.

THE SPECIFIC CHARACTERS.

GERANIUM MACULATUM. *Stem* erect, angular, dichotomous, retrosely pubescent. *Leaves* three-five-parted. *Lobes* canaliculate and entire at base, incisely serrate above, radical ones on long petioles, upper ones opposite, on short petioles.

Erect, pubescence reversed. *Stem* dichotomous. *Leaves* opposite, three or five-parted, glanded, upper ones sessile. *Peduncles* two-flowered. *Fruit* oblong.

THE ARTIFICIAL CHARACTERS.

CLASS MONADELPHIA. *Stamens* united by their filaments into one set. ORDER DECANDRIA. *Fruit* of five distinct carpels, which separate from the axis, &c.

NATURAL HISTORY.

GERANIUM is the original genus of Linnæus, formerly including all those ornamental species properly called Geraniums, since divided by L'Heritier into three genera, *Erodium*, *Pelargonium*, and *Geranium*, the latter characterized as mentioned at the head of this article, under the botanical analysis. This species is everywhere found in moist woods and the skirts of fields, generally preferring low grounds, though sometimes seen on high hills, and is not inferior in beauty to many that are cultivated in the parlor and greenhouse.

The plant is extremely common in many parts of the United States, having a very extensive geographical range, from Maine to Louisiana, Missouri, and Florida. It is a beautiful plant, well deserving cultivation; the flowers are large, but

scentless, red, purple, or white, with darker veins. It blossoms in the spring and summer, from May to July. The best time for collecting the *GERANIUM MACULATUM* for medicinal purposes is during the fall.

The root is perennial, irregularly gibbous, horizontal, oblong, thick, rough, and knobby. It is brownish, mottled with green externally, and greenish-white within, becoming brittle or friable upon siccation, and then easily pulverizable in the mortar. From the root arise, generally, one stem, and from four to eight root-leaves, supported by petioles from eight to ten inches in length. The stem is erect, terete, and this, as well as its divisions and peduncles, is of a sage-green color, and thickly beset with reflexed hairs. At the height of six, eight, or ten inches from the ground the stem becomes forked, and at the point of division is garnished by a pair of large leaves, supported on petioles less than half the length of those of the radical leaves. The leaves at the fork are commonly much the largest, and are frequently inverted from their upright position, either by a reflexion of the petiole or a convolution of it. Those situated on the upper part of the stem are furnished either with short petioles, or are entirely sessile. The peduncles arise from the dichotomous divisions of the stem, and uniformly bear two flowers on short pedicels. The first fork or division of the stem is furnished with four lanceolate, ciliate, membranaceous stipules of a salmon color. The upper stipules are linear, but ciliated, and of the same color. The calyx consists of five oval-lanceolate, ribbed, cuspidated segments, plumously ciliated on their outermost margins, and membranaceous on the other edges; occasionally three of the segments are ciliated on their edge, and the other two have membranaceous margins. Petals five in number, obovate, and without notches at the apex. Stamens always ten, having glands at the base, and oblong convex deciduous anthers of a purple color. Germ egg-shaped. Style the length of the stamens at first, but afterwards becoming elongated and persistent. Stigmas five. The capsule contains five seeds, which, when matured, are scattered by the elasticity of the awns arrayed along the permanent style.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The medicinal virtues of *GERANIUM MACULATUM* reside exclusively in the root, which is nearly scentless, taste astring-

gent, but not unpleasant. It contains much tannin, more than kino, extractive, lignine, and kinic acid, or a peculiar acid, differing from gallic acid in not reddening vegetable blues, and not passing over in distillation. The active principles are soluble in water and alcohol, the alkalies neutralize them.

The practice of using a decoction of the *Geranium* is extensively followed in the country, for all bowel complaints; and this is done from a knowledge of its astringency, but sometimes, perhaps, improperly, or too early. Whether the use of the astringent decoction in dysentery can always be admissible, is perhaps doubtful, and whether it has ever actually done much good in that complaint is somewhat problematical. It is very likely that, as diarrhea is frequently called dysentery in the country, the powers ascribed to this plant in curing this last complaint are misapplied, and that its exhibition in cases of common diarrhea has proved beneficial on account of its astringent properties.

Boiled in milk it proves an efficacious medicine in cholera infantum. It contains but little resin, and is, therefore, more particularly adapted to cases where heating and stimulating medicines are less proper. In many cases of looseness of the bowels, the exhibition of this medicine has proved of as much efficacy as other astringents.

The Western Indians value this plant highly, and are said to esteem it as the most effectual of all their remedies for syphilis. They use it also for wounds, gonorrhea, ulcers in the legs, diabetes, bloody urine, involuntary discharge of urine, immoderate menstruation, &c. The general effects of *GERANIUM MACULATUM* on the system are to give tone to the bowels and stomach, stop all immoderate discharges, and prevent internal mortification.

An aqueous infusion of the root has been recommended as an injection for gonorrhea, but some physicians prefer a saturated tincture, combined with white vitriol, to be administered in cases of gleet. The common means of managing those obstinate discharges, however, seem quite as efficacious as the plant in question.

In aphthous affections of the mouth, a decoction of the root is a very useful, important, and not unpleasant remedy. For this purpose abundant evidence is afforded of its decided good effect. Dr. Eberle says, "I have frequently used a strong decoction of the root of the *GERANIUM MACULATUM* in eryanthe tonsillaris, and with evident advantage. As a gargle in ulcers of the tongue and fauces, I have found it highly useful. In a chronic, and very obstinate, case of aphthous ulceration of the mouth, after various articles had been used by others, as well as myself, unsuccessfully, the patient was relieved by the use of gargles made of the root of this plant."



Nº 23.

COMPTONIA ASPLENIFOLIA.

Zucc. herb.

82220. Solitary, erect, without albumen.



CONTORNA ASPLENIOLIA.

Ruell. Her.

MYRICACEÆ.

The Sweet Gale Family.

No. 23.

COMPTONIA ASPLENIFOLIA.

SWEET FERN.

Geog. Position. Europe, America.

Quality. Balsamic.

Power. Tonic, astringent, alterative.

Use. Diarrhoea, cholera infantum, debility.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER MYRICACEÆ.

Linnean Classification.

CLASS XXI. Monocot. ORDER Triandria.

Authorities. Willd. Sp. Pl. IV. 320. Pursh, Flor. N. A. 435. Lindl. Flor. Med. 306. Raf. Med. Flus. 1. 115. U. S. Disp. 3224. Ex. Disp. U. S. 125. Eaton, Bot. 87, 204. Loud. Exeys. Pl. 772. Gray, Bot. N. U. S. 428. Brach, Fam. Pl. 681. Howard, Bot. Med. 255. Koot, Mat. Med. 440. Wood, Class-Book, 500.

GENUS COMPTONIA.

Named in honor of Henry Compton, Lord Bishop of London, who made extensive collections of plants.

Synonyms. — *Comptonia odorata* (P.) Steud. *Comptonia* (Desf.)

THE ESSENTIAL CHARACTERS.

FLOWERS. Monocious or diocious, axillary, each axillary to a bract.

STERILE. Stamens two - six. Anthers two - four-celled, opening longitudinally.

FERTILE. Ovary one-celled, one-ovuled, surrounded by several hypogynous scales. Stigmas two, subulate or dilated, and petaloid.

FRUIT. Drupeaceous or dry.

SEEDS. Solitary, erect, without albumen.

THE SECONDARY CHARACTERS.

COMPTONIA. *Flowers monocious. STERILE FLOWERS.* Ament cylindric. Bract reniform-ovate, acuminate. Calyx-scale two-parted. Stamens three, forked. Anthers six. **FERTILE FLOWERS.** Ament ovate. Calyx-scales six, longer than the bract. Styles two. Nut ovoid, one-celled.

STAMINATE FLOWERS. Ament cylindric, with calyx scales one-flowered. Corolla two-petalled or none. Filaments two-forked. **PISTILLATE FLOWERS.** Style an ament ovate. Corolla six-petalled (the corolla may be called a calyx). Styles two. Nut oval, one-celled.

THE SPECIFIC CHARACTERS.

COMPTONIA ASPLEXIFOLIA. *Leaves long, linear-lanceolate, alternately sinuate-pinnatifid. Stipules in pairs, acuminate. Barren Flowers in erect cylindric catkins, terminal and lateral. Fertile Flowers in a dense rounded burr or head, situated below the barren ones. Fruit a small, ovate, brown, one-celled nut.*

Leaves long, linear, alternately sinuate-pinnatifid.

THE ARTIFICIAL CHARACTERS.

CLASS MONOCIAL. Stamens apart from the pistils, in different flowers upon the same plant. **ORDER TRIANDREA.** *Strobilæ angiospermous, exogens, monocious. Leaves sinuate-pinnatifid. Flowers in aments. Plant aromatic, with pinnatifid-lobed leaves.*

NATURAL HISTORY.

COMPTONIA ASPLEXIFOLIA is a well-known handsome, aromatic shrub, having leaves resembling the *Asplenium* or *Spleenwort*, and hence the specific name. It blossoms very early in March and April, before the leaves are unfolded, and unless sought for at this early season will seldom be found flowering, that state of the plant continuing but a very short period. The plant is very common throughout the United States, from New England to Carolina, on hills and alluvial plains, in poor, rocky, and sandy soils, forming vast glades in the woods; frequently seen on the Alleghany Mountains and in the plains, but nearly disappearing west of the mountains, and unknown to the Western prairies. It is generally observed that the branches die at the end of the third year, the new wood then succeeding to the old, as in the *Rafé*, and that it is seldom found in fruit, though it flowers abundantly.

Sweet Fern is a small shrub with many crooked branches,

of two, three, seldom four feet in height. The root is ligneous, long, and horizontal, often extending three or four feet. The stems are slender, branched, somewhat hairy, and crowded with a profusion of leaves, which are alternate, sessile, with two small oval acute stipules at the base, from three to five inches long, half an inch broad, acute at both ends, with a strong middle nerve on each side, regularly sinuate by large equal obtuse lobules. Flowers appearing before the leaves, the male in many superior, lateral and cylindrical catkins; the female inferior, in a few globular, or oval lateral catkins; scales of both catkins imbricated, concave, reniform, acuminate, caducous, and one-flowered. Male flowers with a two-leaved perigone shorter than the scales, each part equal, and keeled. Six stamina, or anthers, on three short, hooked filaments. Female flowers with a bristly perigone of six filiform persistent segments, larger than the scales. Pistil oval, two capillary styles. Seeds oval, or oval nuts, or achenes compressed yellow, forming a round burr.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The properties of *COMPTONIA ASPLENIIFOLIA* are astringent, tonic, calefacient, cephalic, balsamic, expectorant, &c. It contains benzoic acid, tannin, and a resinous substance. The taste is balsamic and pungent. When the acid is perfectly pure, it is inodorous, but usually it is found to possess a slight aromatic odor; its taste is pungent, sweetish, acrid, and acidulous; it is in feathery or flocculent crystals, soft to the touch, and not pulverulent, of a beautiful whiteness and a silky lustre.

The whole plant, but chiefly the leaves, is possessed of a strong, peculiar resinous and spicy scent, particularly observable when the leaves are bruised or pressed in the hand or between the fingers. It possesses all the properties of the astringent and tonic balsams, and is particularly recommended for diarrhoea, loose bowels, and the summer complaint of children, or cholera infantum, in the form of a weak decoction. This decoction, sweetened, forms an extremely grateful drink for children, and from its moderate astringency, and heating and tonic effect on the bowels, it will always be found to be a useful auxiliary in the treatment of this disease.

In Pennsylvania and Virginia, the inhabitants use this plant for many other diseases, in rachitis, in debility, in fevers, as a diluent tonic, in rheumatism and contusions. Its almost universal use among the country people, who dwell where it grows in great abundance, as a remedy for diseases already

mentioned, evinces the probability that it is frequently found efficacious, and there is little doubt the shrub is well deserving further and better attention.

When the bloody flux prevailed as an epidemic in Rhinebeck, in 1781, and swept off the inhabitants daily, an infusion of Sweet Fern was employed with such success, that it was considered almost a specific. It produces perspiration without increasing the heat of the body.

A conserve of this plant is likewise a good medicine in hemoptysis or spitting of blood, provided it be taken in sufficient quantity and long enough persisted in. It may be taken in the quantity of two or three ounces a day, and if the patient be troubled with a cough, it should be made into an electuary with balsamic sirup. Chewing the root is also a good remedy, and, according to Schoef, stops blood-spitting.

Though numberless medicines are extolled for expelling and killing worms, yet it is well known no disease more frequently baffles the physician's skill, and though a medical writer of the present age has enumerated upwards of fifty plants, all celebrated for expelling worms, yet the *Asplenium Filix-Mas*, *Mole Shield Fern*, a very important genus of this family, is not included. This plant, however, is a most powerful vermifuge for the tape-worm. A case of this description, accompanied with swoonings, privation of speech, and a voracious appetite, occurred in Rhode Island. The patient had voided portions of the tape-worm for twenty years, and had tried various medicines to no purpose; at length he tried a strong decoction of this plant, taking large quantities daily for several days; after a brisk purgative, the worm was at length expelled.

In the year 1775, the king of France was induced to purchase, for a considerable sum, from the widow of a surgeon in Switzerland, the recipe of a medicine strongly recommended as an effectual cure for the tape-worm. On analysis, it was found to contain little else than the powder of the root of *Asplenium Filix-Mas*, to be administered in the following manner:—Take a dose of calomel and jalap in the usual form, the next day take three drachms of the powdered root, and about two hours after repeat the dose of calomel and jalap, and drink a tescupful of tea made from the root of Sweet Fern every hour till the tape-worm is expelled. When the worm commences to pass the bowels, care must be taken not to break it off, or it may grow again, for it has this peculiar property. The tape-worm has come away from the patient after taking a drachm of the powder without having recourse to any purge.

The FERNS, consequently, are thus a far more valuable article in the *Materia Medica* than is generally supposed, and should be appreciated accordingly.



5124

CONVOLVULUS PANDURATUS

Foliae et Radix



1144

Stemodia *Stemodia*
Stemodia *Stemodia*

CONVOLVULACEÆ.

The Convolvulus Family.

No. 24.

CONVOLVULUS PANDURATUS.

WILD POTATO. *Mus-of-the-Earth.*

Geog. Position. Europe, America.

Quality. Acid, bitter.

Power. Cathartic, diuretic, pectoral.

Use. Gravel, strangury, dropsy.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER CONVOLVULACEÆ.

Linnean Classification.

CLASS V. *Pentandria*. ORDER Monogamia.

Authorities.—*Lia*, Sp. Pl. 218. *Wills*, Sp. Pl. 1. 820. *Park*, Flor. N. A. 344. *Land*, Fl. Med. 296. *Burton*, Lec. 183, No. 184. *Barnes*, Vég. Mat. Med. 1. 23. *Bot. Med. Proc.* 1. 125. *U. S. Disp.* 278. *Ec. Disp.* U. S. 137. *Encyc. Bot.* 44, 206. *Loeb*, Encyc. Pl. 160. *Guy*'s Bot. N. U. S. 248. *Howard*, Bot. Med. 228. *Henry*, Med. Herb. 44. *Kost*, Mat. Med. 128. *Wood*, Class-Book, 441.

GENUS CONVOLVULUS.

From the Lat. *CONVOLUTUS*, to revolve, from the habit. A large genus of twining or prostrate herbs.

Synonyms.—*Le Lichen* (Fr.). *Die Winde* (Ger.). *Winds* (Dutch). *Il Villanchio* (It.). *La Corregulla* (Sp.). *Olanchio* (Port.). *Sundli* (Hun.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals five, much imbricated, usually united at base, persistent.

COROLLA. Regular. *Limb* five-lobed or entire, plaited and twisted in involucrium.

STAMENS. Five, inserted into the base of the corolla, and alternate with its lobes.

OVARY. Two—four-celled, free. *Style* united into one.

FRUIT. Capsule, two—four-celled, valves with septifragal dehiscence.

SEEDS. Few, large, with thin, mucilaginous albumen. *Cotyledons* foliaceous, or wanting.

THE SECONDARY CHARACTERS.

CONVOLVULUS. *Calyx* five-parted, naked, or with two small bracts near the base. *Corolla* campanulate or funnel-form. *Limb* five-lobed. *Stamens* shorter than the limb, rarely a little longer. *Ovary* two-four-celled, cells one-two-seeded. *Style* simple. *Stigma* simple or two-lobed. *Capsule* valvate, two-four-celled, four-six-seeded.

Calyx five-parted, with or without two bracts. *Corolla* funnel-form, plaited. *Stigma* two-lobed or double. *Cells* of the capsule two or three, each one or two seeded.

THE SPECIFIC CHARACTERS.

CONVOLVULUS PANDURATUS. *Stem* twining. *Leaves* broad, obovate or panduriform. *Peduncles* long, one-four-flowered. *Calyx* smooth. *Corolla* tubular, campanulate.

Twining, pubescent. *Leaves* broad, obovate, entire or lobed, guitar-form. *Peduncles* long. *Flowers* fascicled. *Calyx* glabrous, awless. *Corolla* tubular, bell-form.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER MONOGYNIA. Monopetalous. *Flowers* inferior. *Corolla* regular. *Herbs* (rarely shrubby). *Stamens* alternate with petals. *Fruit* capsule or berry. *Cells* with one or two seeds. *Corolla* limb entire.

NATURAL HISTORY.

The genus *CONVOLVULUS* contains a large number of species, of which about sixteen are natives of this continent. The one now under consideration derives its specific appellation from the shape of its leaves, which are frequently panduriform or fiddle-shaped. The plant is perennial, and flowers in July and August. It is found everywhere in the country, from Canada and New England to Florida and Missouri, growing in sandy and stony fields, by fences and the road-side, in poor and loose soils, on gravelly hills and alluvions, in open glades and thickets, but seldom in shady woods.

The species of the *Convolvulus* family best known in this country are for the most part trailing plants, depending for support upon others; but between the tropics, where the order especially abounds, it contains also standard shrubs and even trees. The order is remarkable for the curious *plaiting* into which the corolla folds when it closes. In most species it opens and closes under the influence either of light or of dark-

ness,—some opening only in the day, and others only at night; and there is one curious species in which the flowers are so sensitive as to contract beneath the touch, like the leaves of the Sensitive Plant.

The root of *CONVOLVULUS PANDURATUS* is perennial, very large, cylindric or fusiform, from two to four feet long, as thick as the arm, yellowish outside, whitish and milky inside, with many fissures, often branched below and attenuated above. Stems several from the same root, procrembent or climbing, slender, smooth, round, purplish, from four to eight feet long, sometimes branched. Leaves cordate at the base, broad, alternate, petiolate, margin entire or undulate, or lobed in the sides like a fiddle, very sharp, but hardly acuminate, smooth, deep green above, pale green below. Petioles two to three inches long. Peduncles axillary, longer than the petioles, generally branching at the top, and bearing several large flowers. Flowers in fascicles of two to six. Calyx with five unequal segments, ovate, obtuse, concave mutic, two smaller opposite, outside. Corolla large, funnel-shaped, about two or three inches long, and as broad above, base tubulose, color white, or incarnate, or purplish. Stamina white, filaments filiform, unequal, inclosed, anthers oblong. Style white, filiform, stigma bipartite, segments linear. Capsule oblong, with two cells and four seeds.

Linnaeus named this plant *panduratus*, because the leaves are often lobed on the sides like a fiddle; but this does not always happen, and some plants have all the leaves cordate and entire. This plant is one of the false jalaps, and others are found from Georgia to Yucatan, on the sandy shores, and several are growing in South America. The true jalap of commerce has been ascribed to several plants, and a controversy exists on the subject. The true *Convolvulus jalapa* appears to grow in the Andes of South America and Mexico.

The plant is of easy cultivation, it grows readily in any soil, and is increased by the roots and seeds, or by cuttings, in sand.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The taste and smell of the root of *CONVOLVULUS PANDURATUS* approximate to scammony and jalap; they are, however, less nauseous and acid. It possesses a large quantity of starch, and its properties are cathartic, diuretic, and pectoral. It acts like jalap, rhubarb, briony, and scammony, at a larger

dose when given in substance, but the extract from the fresh root, which is milky, is more efficient, and is a mild cathartic at a small dose of ten or twelve grains. The plant is a safe substitute for the more costly roots already mentioned, and as the root often grows very large, sometimes weighing twenty pounds, it might advantageously be made an article of commerce.

Wild Potato is a good purgative, in the torpid state of the intestines, in leucophlegmatic, hypochondriacal, and maniacal subjects, in worm cases, and the slimy state of the bowels to which children are subject; and as a hydragogue cathartic in dropsy, it is supposed to possess singular efficacy. A tablespoonful of the powdered root may be taken twice a week. The Indians were well acquainted with its purgative qualities, and they also employed it as an external application for removing hard tumors, itch, scurf, &c. It is said, that they can handle rattlesnakes with impunity, after wetting their hands with the milky juice of the root of this plant, or of *Aram triphyllum*.

The root of the plant seems to possess some hydragogue properties, and has been very highly recommended in many parts of the United States, in cases of gravel. It is used either in powder or in decoction. Dr. Harris, of New Jersey, found an infusion or decoction of the root very useful in his own person. He is persuaded that it has enabled him to pass the calculous granules with greater facility. The fresh root cut in slices, and infused in spring or rain water, for twelve hours, and the patient taking a teaspoonful, four or five times a day, has carried off the urine, and has likewise been found very efficacious in bringing away large quantities of earthy matter in flakes. In some parts of Pennsylvania, where its root is collected and sold for *Mechoricum*, it is represented to possess the same virtues and appearance as that article.

A syrup made of this plant, with skunk cabbage, is highly recommended as a pectoral and a mild and sure cathartic, and has been used with very good effect for consumptive coughs and asthma. Take two pounds of this root, bruised, and one pound of the bruised root of *Symplocarpus foetidus* or Skunk Cabbage, both dried, boil them in eight quarts of spring or rain water, to the consumption of four, strain the decoction through fine linen, to which add two quarts of honey, and boil the syrup down to three quarts. Keep the mixture in a stone jug, to be used in the following manner. Take a wineglassful of this liquor daily, four or five times a day, and use the following tea: pour a quart of boiling water on an ounce of the bruised, dry root of Skunk Cabbage, and sweeten it with honey. Dose, a teaspoonful three times a day.

The root should be collected, for medical purposes, at the end of summer, and if to be dried, ought to be cut in slices.



NO 25
PHYTOLACCA HETEROPHYLLA
(Toxic Amaranth)

..... Blacate or dry.



PHYTOLACCACEÆ.

The Pokeweed Family.

No. 25.

PHYTOLACCA DECANDRA.

COMMON POKK OR SCORER. *Gargel, Jalap.*

Geog. Position. Europe, America.

Quality. Aqueous, slightly sweetish.

Power. Emetic, cathartic, narcotic.

Use. Fevers, rheumatism, cancer, gout.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER PHYTOLACCACEÆ.

Linnean Classification.

CLASS X. *Dicandrie.* ORDER Decagynia.

ANTHODORA. — Lin. Sp. Pl. 515. Willd. Sp. Pl. II. 822. Pers. Fl. N. A. 324. Lind. Fl. Med. 351. Hieron. Med. Bot. I. 28. Barton, Lac. 232, No. 418. Barton, Vez. Med. Mod. II. 212. Rat. Med. Fl. II. 251. Willdow, Med. Dic. 36. U. S. Disp. 355. Sp. Disp. U. S. 309. Edmon. Bot. 62, 337. Lond. Encyc. Pl. 290. Griff. Med. Bot. 535. Gray, Bot. N. U. 8. 385. Beck, Fam. Pl. 529. Howard, Bot. Med. 227. Henry, Med. Herb. 212. Wood, Class-Book, 476.

GENUS PHYTOLACCA.

From the Greek *phos*, a plant, and *laxis* loss, i.e., because the plant produces lesions with a fine purple juice resembling lac. The English-American name, Pokeweed, is a corruption of *Pocou*, the name by which it was formerly known in Virginia.

SYNONYMS. — Mucillo & Grappea (Fr.), Die Schmalblutige (Ger.), Lakplant (Dutch), *Planta lacca* (It.), *Hierba carmin* (Sp.), *Kalafio* (Sardinian).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals four—five, petaloid.

COROLLA. Wanting. (By some authors the corolla is called a calyx.)

STAMENS. Four—five, and alternate with the sepals or indefinite.

OVARY. One—several-celled. Styles and stigmas equal in number to the cells.

FRUIT. Baccate or dry.

SEEDS. Solitary, ascending. *Embryo* cylindric, curved around fleshy albumen.

THE SECONDARY CHARACTERS.

PHYTOLACCA. Calyx five-sepalled, resembling a corolla. Stamens seven—twenty. Styles five—ten. Berry superior, ten-celled, ten-seeded.

Color none. Corolla five-petalled or five-lobed, calyx-like, inferior. Berry ten-celled, ten-seeded.

THE SPECIFIC CHARACTERS.

PHYTOLACCA DECANDRA. Leaves ovate, acute at both ends. Flowers with ten stamens and ten styles.

Leaves even, acute at both ends. Flowers numerous. Berries flattened at the ends.

THE ARTIFICIAL CHARACTERS.

CLASS DECANDRIA. STIMENS TEN. ORDER DECAGYNIA. Apetalous. Calyx petaloid, five-sepalled. Fruit a ten-seeded berry.

NATURAL HISTORY.

THE PHYTOLACCA DECANDRA is a plant very common to both the Old and the New World. It is found in the south of Europe, and in America it inhabits a very extensive tract of country, from the New England States to Mexico, and probably much farther south. It grows generally along roadsides and hedges, and in old fields. It is seldom found in woods, but when there, it appears to have grown up from seeds accidentally deposited by birds.

The root, when young, is nearly perpendicular in its direction; as it advances in age, it throws out numbers of lateral shoots or branches. It often grows to a very large size, nearly the thickness of a man's arm. It is succulent and of a whitish color. The stem is frequently eight or ten feet high, with the diameter of an inch or more, herbaceous, round, smooth, and branching. In some places, when mature, it is of a fine deep purple color. The leaves are five inches long, two—three broad, alternate, sitting upon footstalks, ovate, oblong, acute, very entire and smooth; they are petioled, and of a rich green color. Racemes cylindric, long at first, terminal, becoming finally opposite to the leaves. Flowers greenish-white, consisting of five ovate-concave sepals, ten stamens,

with white two-lobed anthers, and ten short, recurved styles. The fruit is a dark purple berry, orbicular, depressed, having eight or ten longitudinal furrows, umbelicated by the pistils. There are as many loculements as there are pistils. The berries are at first green, afterwards they are of a fine red color, and when perfectly ripe they are black. The seeds are uniform or kidney-shaped, black, shining, and smooth. There is one seed in each loculement.

In many parts of the United States the inhabitants very generally boil the young roots, and eat them in the manner of spinach. The stems, when boiled in this state, are scarcely distinguishable from it; they are nutritious, wholesome, and in taste equal to asparagus. Indeed, in some cases it is thought preferable, as it does not affect the urine with fetid odor, which so commonly occurs after eating asparagus.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The numerous experiments made with this plant by several eminent chemists tend to prove that the *PHYTOLACCA BUCANDEA* contains gum and resin, with a large proportion of emacinate matter. The proportions of the gum and resin are, however, very different; thus, the quantity of resin from the root is very small in comparison to that of the leaves or berries, and the gum is also less than that of the berries. The stems and leaves contain more potash than any other plant, — sixty-seven per cent. by burning, and forty-two per cent. of pure caustic potash by lixiviation. The plant also appears evidently to possess an anodyne quality, which may be inferred from the drowsiness it occasions, and perhaps from the ease in its operation as an emetic. It is diaphoretic, cathartic, and diuretic. These effects probably proceed from the narcotic and anodyne qualities above noticed. When an emetic is exhibited in small doses, diaphoresis generally is the result, especially if combined with an opiate; and frequently emetics, when they pass unchanged from the stomach into the intestines, prove cathartic; such substances, indeed, often show diuretic effects.

As an emetic, this plant seems hardly inferior to ipecacuanha. Ten grains of the powder will seldom remain on the stomach, and twenty or thirty grains will always produce a powerful emesis, and sometimes catharsis. It operates with ease, and rarely occasions nausea, pain, or cramp; it is rather slow in its effects, but continues to operate for a longer period of time than is usual with emetics, though it is readily checked with opium. The powdered leaves are also some-

times used for the same purpose, but the root is generally preferred, as it appears to be much more powerful, and consequently smaller doses of it are necessary.

The various effects of the different parts of this plant are remarkable. The root is more powerful than the other parts, notwithstanding it contains a smaller proportion both of gum and resin. It seems, however, highly probable that it contains in a greater quantity than the other parts something of a volatile and corrosive property (which exists throughout the whole plant), as, when tasted, it is evidently stronger and more acrid than either the leaves or the berries. This corrosive and volatile property appears also to be much more evident in the green than in the dry state of this vegetable, and is least sensible when it is boiled. On this account, persons who have taken decoctions of this plant were not only frequently disappointed, although the decoctions were strong, but they had to swallow immense doses before any cathartic effect could be produced.

This plant has obtained considerable reputation in the treatment of rheumatic affections, and lately the attention of many of the inhabitants of the United States has been drawn by its extraordinary effects, of the success of which they speak with astonishment. The case of Mr. William Matlock, who was cured by the use of this valuable remedy, deserves to be mentioned. He had been afflicted with this disease for about eight or nine years, during which time he was attended by a number of physicians, but in vain. They tried every thing they could think of (though they never had recourse to phlebotomy); some remedies gave relief for a short time, but their effects were soon over. In this condition his case really became desperate; he was, for a considerable time, unable to move; his jaws became locked, which once continued about ten days, and his appetite failed. He at last had recourse to the tincture of the berries of *PHYTOLACCA BECANDRA*. In about a week his appetite began to return and his pains to subside; when the medicine purged him too much, he discontinued its use for a few days. By persisting in this remedy for about three months, he was perfectly restored, and became able to follow his business as usual. Mr. Matlock infused about a pint of the berries in a pint of brandy. Of this he took a common wineglassful every night and morning.

As an external application, Poke, or Garget, has proved very beneficial in all sorts of cutaneous diseases, in cancerous sores, &c. It acts as a local stimulant and a mild caustic. It has been used to advantage in fistula lachrymalis, in the form of an extract applied twice a day on the part affected, and in hemorrhoids, given internally in the form of an infusion; and when it does not operate, the same infusion is to be injected into the rectum. This will in general effect a cure.



N^o 26.
HAMAMELIS VIRGINIANA.
Witch Hazel

Bot. Amer. Mus. Nat. Hist.

HAMAMELACEÆ.

The Witch-Hazel Family.

No. 26.

HAMAMELIS VIRGINICA.

WITCH-HAZEL.

Geog. Position. North America, Japan.

Quality. Slightly bitter.

Power. Tonic, astringent, sedative.

Use. Diarrhœa, dysentery, hæmorrhage.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER HAMAMELACEÆ.

Linnaean Classification.

CLASS V. *Tetrandria.* ORDER *Digynia.*

Authorities.—WILLD. Sp. Pl. 765. Presch. Floe. N. A. 115. Darlington, Fl. Conn. 114. Raf. Med. Floe. I. 227. U. S. Disp. 1852. En. Disp. U. S. 202. Fourn. Bot. 44, 268. Lond. Encyc. II. 344. Gall. Med. Bot. 235. Gray, Bot. N. U. S. 123. Beach, Fam. Pl. 458. Howard, Bot. Med. 259. Kunt, Mat. Med. 468. Wood, Class-Book, 253.

GENUS HAMAMELIS.

From the Greek *ἡμα* *hama*, that is, with one apple, because the fruit is upon the tree at the same time with the flowers.

SYNONYMS. *L'Hammelis* (Fr.). *Der Zosterstruch* (Ger.). *Tortuaria* (Dutch).

THE ESSENTIAL CHARACTERS.

CALYX. Adherent to the ovary, four-cleft.

COROLLA. *Petals* four, linear.

STAMENS. Eight, those opposite the petals barren (or many, and all fertile, with no petals).

OVARY. Two-celled, styles solitary.

FRUIT. Capsule coriaceous, the summit free from the calyx. Two-beaked, two-celled.

SEEDS. Pseudulous.

THE SECONDARY CHARACTERS.

HAMAMELIS. Calyx four-leaved, or cleft, with an involucre of two-three bracts at base. *Petals* four, very long, linear.

Sterile stamens scale-like, opposite the petals, alternating with the four fertile ones. *Capsule* nut-like, two-celled, two-beaked.

Leaves three-lobed. *Petiole* four-angled or four-lobed. *Petal* long, very long-linear. *Nut* two-celled, two-beaked.

THE SPECIFIC CHARACTERS.

HAMAMELIS VIRGINICA. *Leaves* oval or obovate, acuminate, crenate, dentate, obliquely cordate at base, on short petioles. *Flowers* sessile, three-four in an involucre, axillary, subsessile glomerule. *Capsule* woody, containing two nuts.

Leaves obovate, acute, toothed, serrate, with a small sinus.

THE ARTIFICIAL CHARACTERS.

CLASS TETRADELEA. *Stems* four. **ORDER DIOYNIA.** *Shrub*, or small tree. *Flowers* with four linear, and very long petals. *Capsules* two-celled.

NATURAL HISTORY.

THE *HAMAMELIS VIRGINICA* is a curious and remarkable shrub, not infrequent in the forests of New England and North America. Amidst the reigning desolation of autumn and winter, this plant alone put forth its yellow blossoms, and thus enlivens the otherwise dreary surrounding scenery. The plant flourishes from New England to Carolina and Ohio; it is commonly found in damp woodlands, on hills and mountains, near the stony banks of streams, and rarely in alluvions or in plains. The blossoms continue from October till February, totally distinct from all other trees, and the fruit remains on throughout the whole year, till the next fall, when it frequently explodes, with a noise like *Hera crepitans*, scattering the seeds around. The blossoms show a handsome yellow appearance, and are scattered along the branches in clusters of from three to five. They do not appear until the leaves begin to decay, when they remain in bloom until the snow falls, imparting to the woods a gay and spring-like beauty. The tree has fruit and blossoms at the same time.

The Witch-Hazel is a shrub from six to ten feet high, with irregular branches, flexuous and knotty, bark smooth, gray, with brown dots. Leaves rather large, smooth, alternate, petiolate, obovate, base with a small sinus and unequal lobes, margin with unequal faint teeth, commonly obtuse, end obtuse, nerves prominent. Flowers on short pedicels.

clustered three to five together, in several places along the branches. Calyx small, but enlarging with the fruit, with three or four scales at the base, divided into four thick, oval, pubescent segments. Petals yellow, much longer, linear, obtuse, often undulate or revolute. Stamens four, opposed to petals, shorter than the calyx. Pistil oval, central, a short style, two stigmas obtuse. Fruit, a nut-like capsule, similar to a hazel-nut; but bilobed and split above, pubescent, yellowish, with two cells, containing each an oblong black seed, with a broad arilla at the base. This capsule is one year ripening, and opens with elasticity, and instantaneously, with a noise, by two half-valves throwing off the seeds.

The *HAMAMELIS VIRGINICA*, in the appearance of the leaves, very much resembles the common hazel-nut, *CORYLIS AMERICANA*, but the blossoms are entirely different. The small branches were formerly used by the adepts of the occult arts for "divining rods," to indicate the presence of precious metals, and of deep springs of water under ground. The *Alnus* and *Corylus* were, however, often substituted for the shrub under consideration. A forked branch was used, and the two branches held in both hands; when and where the point drops are to be found the metals or springs sought. Some persons still deem a denial of these virtues to the *Hamamelis Virginica* an offence little short of heresy.

Hamamelis is the name under which Athenæus describes a fruit like an apple. This is another of the not very commendable freaks of gentlemen who name genera; the present plant being more like a hazel-nut than an apple-tree.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The properties of the *HAMAMELIS VIRGINICA* are not accurately ascertained, not having been as yet analyzed. It seems, however, from its peculiar popularity, to deserve the particular attention of practitioners. It is supposed to contain tannin, amarine, extractive, and essential oil. It is also said to be sedative, astringent, tonic, discutient, and very extensively and advantageously used in the North by herbalists.

This shrub has been highly esteemed by the Indians generally, and by the Osage tribe in particular, who called it *Sheaba*, and who universally employed it for the cure of ulcers, tumors, sores, etc.

The bark is slightly bitter and astringent, leaving a pungent sweetish taste, which remains for a considerable time. The smell is not unpleasant. It affords an excellent topical ap-

plication for painful and inflammatory external inflammations generally. The bark and leaves dye brown, and with the addition of copperas make an excellent black. The inner rind is strongly recommended as a cataplasm poultice or wash, in severe and painful inflammations of the eyes, and has been found very efficacious. The leaves possess the same qualities, and may be used in the same manner, and for the same purposes. The leaves are an excellent astringent, and, in combination with cayenne, may be freely and advantageously employed in any cases in which astringents are necessary. They have the reputation, also, of being antiseptic and tonic. The infusion is useful in bleeding from the stomach; and, administered in the form of an injection, affords great relief in distressing and irritable piles. The leaves, pulverized and used as snuff, are an excellent remedy for bleeding at the nose. A tea made with the leaves is a powerful styptic, and is frequently employed for many purposes, — in amenorrhœa, bowel complaints, pains in the side, menstrual affections, bleeding of the stomach, &c., &c. In the latter case, the chewed leaves, decoction of the bark, or tea of the leaves, are all employed with very great advantage. In some cases the bloodvessels are so affected, that hemorrhage and ulceration take place. In such instances, the Witch-Hazel is particularly calculated, if judiciously applied, to remove purulent matter, and keep the orifice cleansed, while the same is healing. A strong decoction of the bark and leaves of this plant is frequently used, and with encouraging effect, in the form of an injection into the vagina, as a remedy in the bearing down pains of women, which occur at other periods than during labor, or for prolapsus, or falling down of the womb. In chronic stages of dysentery, after the inflammatory diathesis, tenesmus, &c. have been removed, this decoction has restored patients to health, after various tonics and astringents had been used to no purpose. A strong decoction is also commonly administered in injection, for bowel complaints; and with like success.

The seeds of this plant are sometimes eaten by the Indians, and in the South, where they are erroneously called *Pistachio-nuts*, although quite unlike the *Pistacia vera*, or true *Pistachio* of the Mediterranean. They are similar in shape to the esculent Pine seeds of *Pinus strobus*, cylindrical, shining, black, outside white and furinaceous, inside rather oily and palatable, but less edible than the hazel-nut.

All the species of the genus *HAMAMELIS* have probably the same properties. In the North, the *Hamamelis parvifolia* is equally used. This species is distinguished by smaller leaves, pubescent beneath, hardly ciliate at the base, undulate, and sinuate. The shrub is smaller than the *HAMAMELIS VIRGINICA*, with blossoms of a brighter yellow, and grows in mountains.







Nº 27.
LOBELIA INFLATA.
Inflata. Puff-bloom.



LOBELIACEÆ.
The Lobelia Family.
 No. 27.

LOBELIA INFLATA.

LOBELIA. *Electric-weed, Indian Tobacco, Eyebright.*

Geog. Position. United States.

Quality. Acid, nauseous.

Power. Emetic, antispasmodic.

Use. To cleanse the stomach, relax the tissues, and remove obstructions.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER LOBELIACEÆ.

Linnean Classification.

CLASS V. *Pentandria.* ORDER *Monogynia.*

AUTHORITIES.—Lin. Sp. 11. 1606. Willd. Sp. 15. 546. Park. Flor. N. A. 448. Lindl. Flac. Med. 480. Higginw. Med. Bot. 1. 177. Rostk. Lev. 203. No. 359. Barrow, Vag. Mat. Med. 1. 181. Raf. Med. Flor., II. 72. Whittier, Med. Dic. 163. U. S. Disp. 436. Ec. Disp. U. S. 346. Eaton, Bot. 47. 304. Lond. Encyc. Pl. 166. Eilhard and Garrod, Mat. Med. 321. Thomson, Mat. Med. 940. Persoon, El. Mat. Med., II. 395. Goss. Med. Bot. 418. Casson, Eluc. Med. Bot., 1. 68. Gray, Bot. N. U. S. 335. Hook. Foss. Pl. 651. Howard, Bot. Med. 363. Kest. Mat. Med. 76. Wood, Class-Book. 363.

GENUS LOBELIA.

Named in honor of Hieronim de Lobel, a distinguished botanist, and physician to James I. Died in London, 1616.

STRUCTURE.—Lobelia (Fr.)

THE ESSENTIAL CHARACTERS.

CALYX. Superior, the limb five-lobed, or entire.

COROLLA. Limb irregular, five-lobed, the tube inserted into the calyx.

STAMENS. Five, inserted with the corolla, and alternate with its lobes. *Anthers* coherent into a tube. *Pollen* oval.

OVARY. Adherent to the calyx-tube. *Style* simple. *Stigma* surrounded with a fringe.

FRUIT. A capsule, two or three- (rarely one-) celled.

SEEDS. Numerous.

THE SECONDARY CHARACTERS.

LOBELIA. Corolla tubular, irregular, cleft nearly to the base on the upper side. Stamens with the anthers united above into a curved tube. Stigmas two-lobed. Capsule opening at the summit. Seeds minute, numerous, dark brown.

Calyx two-lobed. Corolla irregular, often irregularly lined. Anthers coloring and somewhat twisted. Stigmas two-lobed. Capsule two or three-celled.

THE SPECIFIC CHARACTERS.

LOBELIA INFLATA. Stem hairy, branched, erect. Leaves ovate-lanceolate, sessile, serrate, pilose. Capsule inflated. Flowers in leafy spikes, axillary, peduncled. Corolla small, pale blue, leaving an oval, turgid capsule in the calyx.

Stem erect, branching, very hirsute. Leaves ovate, serrate. Racemes leafy. Capsules inflated.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. STAMENS FIVE. ORDER MONOGENAL.
MONOPETALOUS. Flowers superior. Capsule two- (or more-) celled. Herbs. Corolla irregular.

NATURAL HISTORY.

The genus **LOBELIA** embraces a great variety of species, several of which grow in the United States, and are handsome ornamental plants. The **LOBELIA INFLATA** is, however, not of this last description, being an inebriant plant, but possessing very important qualities.

The plant **LOBELIA**, or Indian Tobacco, is extremely common throughout the United States, growing on the way-sides, in clayey or sterile soils, in neglected fields, and not unfrequently on moist grounds, and on the margin of fences and ditches. Its flowers appear towards the end of July, and continue to expand in succession, until the occurrence of frost.

The **LOBELIA INFLATA** is a biennial, inebriant plant, about one foot, and from that to four feet high. The root is fibrous, yellowish-white, and of an acid taste, resembling that of tobacco. Stem upright, generally solitary, angular, leafy, very pubescent, sometimes hirsute, and very much branched about midway. Branches axillary, shorter than the stem, which rises several inches above the top of the highest branches. The leaves are irregularly scattered, and alternate, sometimes

crowded, oral, generally sessile, with the margins unequally indented with tooth-like serratures. The flowers are numerous, situated on terminal, leafy racemes, and supported on short axillary peduncles. The corolla is monopetalous and labiate, the lower lip three and the upper two-toothed, is of a pale blue color externally, and delicate violet within. The calyx-leaves are awl-shaped, and the length of the corolla. Seeds numerous, very small, and contained in egg-shaped inflated capsules, which have given rise to the specific appellation of the plant.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

LOBELIA INFLATA is unquestionably one of the most active medical plants of the United States. It is possessed of emetic, sudorific, and powerful expectorant properties, and is chiefly remarkable for the first of these operations on the system. It contains also an acrid principle, crotonchou, and extractive. It tastes somewhat like tobacco, but its action is speedy, diffusible, and transient, producing great relaxation without injury to the system, and acts equally well on those who use tobacco. When given with a view to empty the stomach, it operates vehemently and speedily, yet with perfect safety. Unlike other emetics, it never acts directly on the bowels; the very rare instances in which it appears so to do result from its generally relaxing effects, which produce perspiration as well as relieve the bowels of constipation.

The medical properties of this plant have been confirmed and elucidated by several and eminent physicians and practitioners. It has now become extensively used, although some consider it deleterious, narcotic, uncertain, and dangerous. The whole plant is used, but the seeds are the most powerful part. The effects are speedy and very powerful, but various, and differing according to the preparations, doses, and temperaments. In large doses, this article has very generally been considered to produce alarming symptoms, continual vomiting, trembling, cold sweat, and even death. But, on the contrary, Professor Curtis of Ohio, and Tully of New Haven, and with them very many distinguished physicians and practitioners, consider *LOBELIA INFLATA*, at all times and under all circumstances, and wherever applied, not only a pure relaxant, but the most powerful and innocent yet known. In moderate doses it produces sickness in the stomach, vomiting, and a prickly sensation through the whole system; acting on the nervous system, and being a very diffusible stimulant of it.

Every portion of this plant, the *LOBELIA INFLATA*, is endued with the same acid, pungent, and finally nauseating taste.

On chewing the root, the leaves, the stem, or one of the capsules, the first impression on the palate is not very decided; but on continuing the chewing, a sense of heat or biting is perceived in the back part of the tongue, and in the fauces. At this time, the taste of the plant is similar to tobacco, seneka, or tartar-emetic; but if the mastication be continued, nausea and free increase of saliva come on; and if the quantity of the article in the mouth be sufficient, and is swallowed, nausea and vomiting supervene, succeeded by great relaxation of the muscles, perspiration, and temporary prostration. One or two teaspoonfuls in the recent state will produce full vomiting in most persons. From this account it is evident that the effects of this plant are very stimulating to the mouth, and fauces, and throat; and indeed, the great relaxation of muscular energy which it produces when extensively used, appears calculated to expect relief, if not cure, in cases of hydrophobia. Dr. Good relates a case of this description effectually cured in its last stages, which deserves attention; but the subject has never yet been properly pursued.

This plant has been recommended, in some shape or other, for almost every disease; but for the following it may be considered as most efficient:—spasmodic asthma, bronchial cough, tetanus or lockjaw, and strangulated hernia. In asthma, particularly, the plant appears to be almost a specific, although it has failed in some cases when the disease was not spasmodic. In Europe, this plant is extensively used as a remedy for this complaint, and with decided advantage. It is used till it produces nausea and vomiting, while for many diseases it is well to give small doses, frequently repeated. It avails thus for pneumonia and cough caused by accumulated mucus in the bronchias. For hernia, it is given in infusion, like tobacco, which produces a complete relaxation, when the hernia can easily be reduced.

Lobelia does not entirely lose its active properties by boiling or scalding. It should be used in substance or infusion; the seeds and young leaves are strongest. One single grain is sometimes sufficient to produce emesis, while a moderate dose is said to be about ten grains of the powder. A teaspoonful of the tincture is the usual dose; but when made with the seeds it is more efficient, and a single dose has cured the lockjaw, by relaxing instantly the jaws and the whole system.

The free use of this plant is strongly recommended in all nervous diseases, fits, convulsions, spasms, asthma, tetanus, St. Vitus's dance, hydrophobia, &c. No means or processes ever discovered are capable of producing a greater degree of relaxation of organic fibre, and yet nothing that can relax at all is less injurious to the constitution.



Nº 28
RHUS GLABRA.
Smooth Sumach.

Washington, D.C.

January 24, 1942

Dear Mr. [Name]

I have your letter of January 22, 1942.

I am sorry that I cannot give you a more definite answer.

I am sure that you will understand.

I am, very respectfully,

Yours very truly,

[Signature]

[Name]

[Address]

[City, State, and Zip]

[Phone Number]

[Fax Number]

[E-mail Address]

[Web Address]

I am sure that you will understand.

I am, very respectfully,

Yours very truly,

[Signature]

[Name]

[Address]

[City, State, and Zip]

[Phone Number]

[Fax Number]

[E-mail Address]



ANACARDIACEÆ.

The Cashew Family.

No. 28.

RHUS GLABRA.

SHAMBU. Smooth Shambo.

Geog. Position. Europe, America.

Quality. Styptic.

Power. Astringent, refrigerant.

Use. Diarrhœa, dysentery, piles.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER ANACARDIACEÆ.

Linnean Classification.

CLASS V. *Protandria.* ORDER *Trigynia.*

ARTHOGRAPHIS — Lin. Sp. Pl. 480. Willd. Sp. Pl. 1. 1473. Presb. Flor. N. A. 204. Lindl. Flor. Med. 286. Bignell, Med. Bot., III. 17. Barton, Lac. 217. Na. 403. Raf. Med. Flac. II. 356. Willdow, Med. Diet. 55. Lond. Disp. 552. U. S. Disp. 628. Ec. Disp. U. S. 344. Eaton, Bot. 32, 392. Lond. Encyc. Pl. 224. Persoon, El. Mat. Med. 659. Griff. Med. Bot. 184. Gray, Bot. N. U. S. 78. Beach, Fam. Pl. 671. Howard, Bot. Med. 288. Eoos, Mat. Med. 485. Wood, Class Book, 202.

GENUS RHUS.

From the Greek *rhin*, to flow, because it is useful in stopping hemorrhage.

SYNONYMS. — Le Shambo arborescens (Fr.), Der Shambo (Ger.), Shambo (Dutch), Schamboo (H.), Zamagno (Sp.), Samagno (Port.), Kouchemoo Juvuro (Rass.).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three — five, united at base, persistent.

COROLLA. *Petals* same number as *sepals*; sometimes wanting, imbricate in aestivation.

STAMENS. As many as petals, alternate with them, distinct on the base of the calyx.

OVARY. One-celled, free. *Ovule* one. *Styles* three, or wanting. *Stigmas* three.

FRUIT. A berry or drupe, usually the latter.

SEEDS. Solitary.

THE SECONDARY CHARACTERS.

Rhus. Calyx of three sepals, united at the base. Petals and stamens five. Styles three. Stigmae capitate. Fruit a small, one-seeded, sub-globose dry drupe.

Calyx five-parted. Petals five. Berry one-seeded, small, sub-globose.

THE SPECIFIC CHARACTERS.

Rhus glabra. Leaves and branches glabrous. Leaflets six - fifteen pairs, lanceolate, acuminate, acutely serrate, whitish beneath. Fruit red, with crimson hairs.

Stems, petioles, and leaves glabrous. Leaves pinnate, many-paired. Leaflets lance-oblong, serrate, whitish beneath. Fruit silky.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. STAMENS FIVE. ORDER TRIOTNYA. Flowers inferior. Leaves alternate. Shrubs. Berry un-seeded.

NATURAL HISTORY.

The species of *Rhus* called *Rhus glabra*, or Smooth Sumach, is a native of North America, and also of the South of Europe. It is found in almost all parts of the United States, and grows abundantly in old, neglected fields, along fences, and on the borders of woods, and stony hills and mountains, and generally in gravelly soils. The shrub rises from four to twelve feet high; the root sending up many stems, which divide into slender, woody, straggling branches, covered with smooth, brownish bark. The leaves are arranged into two rows, upon smooth petioles, and consist of many pairs of opposite leaflets, with an odd one at the extremity. They are all lanceolate, acuminate, acutely serrate, glabrous, of a deep, shining green color on their upper surface, and hoary or whitish beneath. In the autumn their color changes to a beautiful red.

The flowers appear in July and August, and are reddish-green, and disposed in large, erect, terminal, compound thyrses, which are followed by dense clusters of small crimson berries, covered with a very soft down. A whitish powder collects upon them soon after the occurrence of frost, which has received the name of "Indian salt." The berries, which become ripe early in the fall, should be carefully collected before this substance is allowed to be washed away by the rain.

This plant is considered as a weed in North America, where it overruns land left for a few years in pasture.

In Europe, however, it is sometimes carefully cultivated, even in green-houses, where it will thrive well in loam and peat; and cuttings root freely under a hand-glass in sand. The hardy kinds grow in common soil, and are increased by cuttings of the roots or layers.

In some of the species of this genus, the flowers are hermaphrodite; in others, the male and female are on separate plants; and in some they are polygamous, males being mixed with the hermaphrodites.

The species from the Cape of Good Hope rarely flowers in this country, and is cultivated for the sake of its foliage, which is neat, and not liable to injury from bad management.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The genus *Rhus*, to which the species belongs now under consideration, comprehends several varieties which possess poisonous properties, and should be carefully distinguished from the *Rhus glabra*, which is perfectly innocent, and whose berries are in some places used for culinary purposes. They have a sour, astringent, but not unpleasant taste, and are often eaten by the country people with impunity. The acid to which they owe their sourness is the malic, and is contained in the pubescence which covers their surface; as, when it is washed away by warm water, the berries are wholly free from any acidity.

The virtues of the *Rhus glabra* are completely extracted by water, and partially by alcohol. The aqueous infusion reddens litmus-paper; precipitates the solution of sulphate of iron, black; that of nitrate of silver, brown; and throws down a precipitate with gelatine; hence the chemical analysis of *Rhus glabra* proves that it contains gum, resin, gallic acid, and tannin. A narcotic principle is also present, on which its effects very materially depend.

The medicinal qualities of the plant are in a great measure ascribed to its stypticity and astringency; properties which it possesses in a sufficient degree to render it useful in dyeing, and tanning of leather, for which it was celebrated in the time of Dioscorides. In Spain and Portugal, the *Rhus glabra* is cultivated with extraordinary care. The country people cut down the shoots every year, quite to the root, and after being dried, they are reduced to powder by a mill, and thus prepared for the purposes of dyeing and tanning.

Both the leaves and berries have been advantageously employed in medicine; but the former are more astringent and tonic, and have been longer in use in various complaints indicating this class of remedies. The leaves may be employed,

in combination with other articles, for all the purposes of an astringent. The berries, which are red, and of a roundish, compressed figure, contain a pulpy matter, in which is lodged a brown, hard, oval seed, manifesting a considerable degree of astringency. The pulp, even when dry, is gratefully acid, and has been discovered to contain an essential salt, similar to that of wood-sorrel, or perhaps more nearly allied to crystals of tartar. The young shoots have great efficacy in strengthening the stomach and bowels; they are best administered in a strong infusion. The seeds dried, reduced to powder, and taken in small doses, are used in dysentery, rheumatism, dysuria, sore throat, putrid fevers, hemorrhage, gangrene, etc. They have an agreeable acid taste, and make a cooling drink, infused in water.

A tea made from *Sweet Smack* is useful in stranguy and bowal complaints. It is of the color of wine, and makes a pleasant medicinal drink for children. Sweetened with honey, it is very beneficial as a gargle, in sore throat, and for cleansing the mouth in putrid fevers.

The bark of the root is considered a valuable antiseptic, in the form of a poultice, for old ulcers, and it is scarcely equalled by any other remedy. An infusion of the inner bark of the root, employed as a gargle, is recommended by experienced practitioners, as a specific in sore mouth attending mercurial salivation. For ringworms, tetter, and other cutaneous diseases, this plant furnishes an excellent external application; and as a wash for offensive sores, it is very beneficial, having the effect to render them clean and white.

The Chippewa Indians regard the root of this plant as a sovereign remedy in the venereal disease. They use the decoction without any limitation, and it is said to soften the violence of the disease, to remove the sensation of heat and pain, and to be an effectual cure in gonorrhoea.

The gum which exudes from the bark, on being punctured during the summer, is similar to copal, and cures the tooth-ache by being applied in hollow teeth. It is also beneficial in gleet and obstructions of the urine, in the form of pills. They increase the secretion of urine, and lessen its burning on being voided. Take of samach-gum and fir-balsam, equal parts; pulverized loaf-sugar, sufficient to form into pills. One or two may be taken at a dose, two or three times a day.

The excrescences produced under the leaves of *Rhus glabra* resemble galls in character, and contain large quantities of tannin and gallic acid. These galls have been used as a substitute for those imported, and are thought to be preferable. They may be collected at little expense, as they are produced abundantly in the Western States. These excrescences, finely powdered and made into an ointment with fresh lard, afford a soothing application for piles.



Nº 261

Taraxacum officinale L. - Dandelion

Dandelion

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COMPOSITÆ

The Composite Family.

No. 29.

TARAXACUM DENS-LEONIS.

Dandelion.

Geogr. Position. Europe, America.

Quality. Milky.

Power. Tonic, diuretic, alterative, aperient.

Use. Hypochondriasis, chronic, cutaneous, and visceral diseases.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER COMPOSITÆ.

Linnean Classification.

CLASS XIX. Syngenesia. ORDER Polyantha Æqualis.

Authorities.—Lin. Sp. Pl. 1322. Willd. Sp. Pl. 1344. Pers. Flor. S. A. 490. Ind. Flus. Med. 478. Barton, Lec. 280, No. 352. Raf. Med. Flac. II. 18. Whittow. Med. Ind. 148. Lindl. Supp. 473. U. S. Disp. 727. Ec. Disp. U. S. 228. Kunt. Bot. 79, 296. Lond. Encyc. Pl. 650. Ballard and Garrod, Mac. Med. 313. Pereira, El. Mat. Med. II. 411. Goss. Med. Bot. 434. Gray, Bot. N. U. S. 250. Benth. Fam. Pl. 263. Howard, Bot. Med. 281. Henry, Med. Herb. 32. East. Mat. Med. 213. Wood, Class-Book, 362.

GENUS TARAXACUM.

From the Greek *ταραξάκος*, rathetic; on account of its once celebrated medical qualities.

Synonyms.—*Le Fionella* (Fl.), *Der Löwenmaul* (Ger.), *Pardalium* (Dex.), *Pisla le jeno* (It.), *Amargos* (Sp.), *Melotichai nava* (Rus.), *Papava nola* (Pol.).

THE ESSENTIAL CHARACTERS.

CALYX. Closely adherent to the ovary, the limb wanting or membranaceous, and divided into pale, bristles, hairs, &c., and called *pappus*.

COROLLA. Superior, consisting of five united petals, either ligulate or tubular.

STAMENS. Five, alternate with the lobes of the corolla. *Anders* cohering into a cylinder.

OVARY. Inferior, one-celled, one-ovuled. *Style* two-cleft, the inner margins of the branches occupied by the stigmas.

FRUIT. An achenium, dry, indehiscent, crowned with the pappus.

SEEDS. Solitary, quadrangular.

THE SECONDARY CHARACTERS.

TARAXACUM. *Involucre* double, the outer of small scales, much shorter than the inner, appressed row; *receptacle* naked; *achemia* produced into a long beak, crowned with the copious, white, capillary pappus.

Involucre double, imbricate, with flexible leaflets. *Receptacle* naked. *Eyes* stippled.

THE SPECIFIC CHARACTERS.

TARAXACUM DENN-LEONIS. *Outer scales* of the involucre reflexed. *Leaves* runcinate, smooth, dentate.

Ovary globose reflexed. *Scape* one-flowered. *Leaves* runcinate with notched divisions.

THE ARTIFICIAL CHARACTERS.

CLASS SYNGENETA. *Stamens* five, cohering by the tips of their anthers. **ORDER POLYGAMIA ÆQUALIS.** **HERBACEOUS** plants. *Flowers* or *florets* collected into dense heads (compound flowers). *Calyx* monopetalous, of various forms.

NATURAL HISTORY.

Every one is acquainted with the *Dandelion*, which is found growing in all open situations, and blossoming at all seasons except winter. It is common to Europe, Asia, and America. It is spread all over the United States, and (though supposed by some to have been introduced) is undoubtedly a native plant.

TARAXACUM DENN-LEONIS is a perennial plant; the root is fusiform, and externally of a dark color. The leaves are all radical, and examples of that peculiar form termed runcinate, that is re-runcinate, the teeth or claws inclining backwards towards the base of the leaf rather than the summit. In very moist situations, however, they are nearly entire, toothed, smooth, and of a pleasant green color. The flower-stem is an erect one-flowered simple scape, hollow, round, naked, smooth, fistulous, fragile, and abounding with a milky, bitter juice. The flower is terminal, large, of a golden color, and closes in the evening; the calyx is smooth, with the exterior scales loosely turned down; the florets are very numerous, ligulate, and toothed at the extremities. The receptacle is spheroidal and punctured. After the flower is closed and de-

rayed, the scape rises higher, and bears a head of perfected seeds and seed-down, the airy, globular form of which is very conspicuous among the tall grass. The seeds are obovate, furrowed, of a pale olive color, and furnished with a radiated pappus on a large stipe.

The Dandelion is regularly produced in the markets of the larger cities of Europe, and is recommended as a winter salad, blanched like Endive. The tender leaves in spring, used in compound salads, are equal to those of Endive or Sorrel. The plant is seldom, however, cultivated. As a weed, it is difficult to extirpate it, because every inch of the root will form buds and fibres, and thus constitute a new plant. It is, however, easily propagated by seeds, and if introduced as a garden plant, it should have a rich, deep soil, and be carefully tied up and earthed round to blanch it effectually. To prevent the weakening of the plant and the dispersion of the seed, it will be well to cut off the flowers as they appear.

Swine appear fond of the plant, and goats will eat it; but sheep and cows dislike it, and horses refuse it altogether.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

THE *TARAXACUM DENS-LEONIS* is isodecous, but has a bitter, somewhat sweetish, acidulous taste. The milky juice reddens the vegetable blues, owing to the presence of tartaric acid. Water extracts the juice better than alcohol, and scarcely any thing is taken up by either; yet caoutchouc has been detected in it. The decoction is precipitated by infusion of galls and solutions of nitrate of silver, muriate of mercury, and superacetate of lead. Sulphate of iron strikes with a pale olive color, and after some time throws down a precipitate. Hence it is probable that the active principles of *TARAXACUM DENS-LEONIS* are extractive, gluten, a bitter principle which does not appear to be resinous, and tartaric acid either free or as a super-tartrate.

This plant has been long used on the continent of Europe, and with undoubted advantage, as a remedy in jaundice, dropsy, pulmonary tubercles, hepatic obstructions, and some cutaneous diseases. In England and the United States, the plant has only been lately tried, and although its powers appear to have been very much overrated by the German and other Continental physicians, yet it certainly possesses considerable efficacy in these diseases.

The root, leaves, and stock of the Dandelion contain a large proportion of bitter, milky juice, which possesses very considerable activity, the immediate effect of which is to remove

visceral obstructions, particularly of the kidneys and urinary passages, and the spleen. It has a direct action upon the liver and kidneys, exciting them when languid. These parts of the plant are said to be mildly detergent and aperient. They owe these qualities, however, chiefly to the milky juice already mentioned, and which is saponaceous. Boerhaave highly commends them as a resolvent; but the more immediate and sensible operation of this plant is to loosen the bowels and promote urine, which it does with little stimulus, though in a slight degree. Dr. Pemberton speaks of the properties of the root, leaves, and stalk of this plant with great commendation. Dr. Murray says that they resolve viscid humors, open obstructed vessels, and prove a valuable remedy for various eruptive complaints.

Great advantages have resulted from using the extract in chronic inflammation and incipient scirrhos of the liver, and in chronic derangements of the stomach. The extract is also well adapted for cases in which bile is deficient without an impaired state of stomach. It is applicable also to hepatic diseases and derangement of the digestive organs generally. Take of fresh Dandelion-root, bruised, a pound; boiling water, a gallon; macerate for twenty-four hours; then boil down to four pints, strain the hot liquor, and evaporate it to a proper consistence. Dr. Good affirms, that he has known great advantages result from the use of this extract. The usual dose is from ten grains to one drachm, united with sulphate of potassa; or in the form of infusion, made by boiling two drachms of the fluid root in two pints of water down to a peck, and to the strained fluid adding three drachms of supertartrate of potassa. Two ounces may be taken, three or four times a day.

Dandelion is frequently prescribed as a diuretic in domestic practice, with advantage; it is employed beneficially in all diseases of the urinary organs, and in dropsical affections of the abdominal viscera. It may be given in decoction. Take of the fresh herb and roots of Dandelion, four ounces; water, two pounds; boil to one pound, and strain the expressed fluid. By decoction, water takes up the whole of the active principles of the *Taraxacum*. When the bowels are sluggish, or there are serous deposits, the addition of the bitartrate of potassa will greatly improve the efficacy of this decoction. The dose is from two to three ounces, twice a day.

This plant, as a winter salad, possesses too much bitter principle to render it fit for the table under any management. The roots are eaten raw as a salad by the French, and boiled by the Germans like Salsify and Scorzoneria. Dried and ground into powder, they afford a substitute for coffee, in all respects equal to that of Chicory roots.

Dr. Rush speaks highly of the power of *TARAXACUM DENS-LEONIS*, and says, that "liver-grown cattle are speedily relieved by grazing in fields abounding with this vegetable."



8760

Asclepias tuberosa,
Tuberous rooted Asclepias Butter-fly-weed

1890

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ASCLEPIADACEÆ.

The Milkweed Family.

No. 30.

ASCLEPIAS TUBEROSA.

BUTTERFLY-WOED. *Pleurisy-root.*

Geog. Position. North America.

Quality. Nauseous.

Power. Diaphoretic, cathartic, anodyne.

Use. Pleurisy, colic, dysentery.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER ASCLEPIADACEÆ.

Linnean Classification.

CLASS V. *Pentandria.* ORDER *Digynia.*

AUTHORITIES.—LIN. Sp. IV. 316. WILL. Sp. Pl. 1272. Pursh, Fl. N. A. 183. Lond. Fl. Med. 329. Bigelow, Med. Bot. II. 36. Benth, Lec. 49, No. 92. Bartram, Vag. Mat. Med. I. 339. Hall, Med. Fl., I. 74. U. S. Disp. 325. Ex. Disp. U. S. 84. Eaton, Bot. 85, 139. Lond. Encyc. Pl. 196. Thomson, Mat. Med. 167. Poiret, El. Mac. Med. II. 357. Griseb. Med. Bot. 434. Casson, Fl. Med. Bot. II. 3. Gray, Bot. N. U. S. 283. Beach, Fl. N. 642. Howard, Bot. Med. 325. Hemy, Med. Herb. 66. Kunt, Mat. Med. 190. Wood, Class-Book, 458.

GENUS ASCLEPIAS.

From the Greek name of *Æsculapius*, of the Latins the god of medicine and physicians, to whom the genus is dedicated.

SYNONYMS.—*L'Asclepiade* (Fr.), *Die Seidenfrucht* (Ger.), *Zyderrugt* (Dan.), *Asclepiade* (It.), *Asclepiada* (Sp.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals five, slightly united, persistent.

COROLLA. Petals five, united at base, regular, deciduous, twisted-imbricate in aestivation.

STAMENS. Five, inserted into the base of the corolla, and alternate with its segments. Filament connate. Anther two-celled, cells sometimes nearly divided by partial septa. Pollen, when the anther bursts, cohering in masses, which are as many as the cells, or confluent into pairs, and adhering to the five processes of the stigma, either by twos, by fours, or singly.

OVARIES. Two. Styles two, approximate, often very short. Stigmas united into one, which is common to both styles, and with five glandular angles.

FRUIT. Follicles two, one of them sometimes abortive.

SEEDS. Numerous, pendulous, almost always comose at the hilum. Albumen thin. Embryo straight. Cotyledons foliaceous. Radicle superior.

THE SECONDARY CHARACTERS.

ASCLEPIAS. Calyx deeply five-parted in maturation. Corolla deeply five-parted, valved, finally reflexed. Staminal corolla three-leaved, leaflets cucullate, with an averted, horn-like process from the base, curved towards the stigma. Antheridium (connate mass of anthers) five-angled, truncate, opening by five longitudinal fissures. Pollinia (masses of pollen) five distinct pairs, fixed by the attenuated apex. Follicles two, ventricose. Seeds comose.

Petals five, reflexed. Nectaries five, concave, erect, containing little honey, each stamen with a pair of pendulous masses of pollen, suspended from the top of the stigma. Filices smooth.

THE SPECIFIC CHARACTERS.

ASCLEPIAS TUBEROSA. Stem ascending, hairy, with spreading branches at top. Leaves alternate, oblong-lanceolate, sessile. Umbels numerous, forming large terminal corymbes.

Stem erectish, at the top spreading-branched, very rough-haired. Leaves scattered, oblong-lanceolate, rough-haired. Umbels terminal, sub-corymbed.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. STAMENS FIVE. ORDER DIOYNIA. MONOPETALOUS. STAMENS inserted on the pistil, consolidated with it. Juice milky.

NATURAL HISTORY.

The genus to which the superb plant ASCLEPIAS TUBEROSA belongs, contains some of the most beautiful productions of the vegetable kingdom; of which the plant under consideration is perhaps one of the most elegant.

The root is large, fleshy, and somewhat irregularly tuberous, sending up numerous erect and somewhat decumbent hairy stems, branching at the top. The stems are round, very hairy, and of a reddish color. The leaves are scattered, and supported on petioles little more than the eighth of an inch in length, varying in being lanceolate-oval, long-oval, lanceolate, and repand on the margin. They are of a deep

rich green above, much paler underneath, and very hairy. The umbels are terminal, and somewhat in the form of a corymb. The bracteal involucre is composed of numerous narrow-linear, nearly subulate, membranaceous leaves, of a salmon-color. The flowers are situated in terminal corymb-like umbels, and are of a brilliant reddish-orange color. The fruit is a long, narrow, roundish pod, pointed at each end, and the seeds, like the rest of the genus, are furnished with a long silky appendage. The plant continues for a long time in bloom, at which time its rich green leaves, contrasted with its gorgeous inflorescence, render it a universal favorite. Its geographical distribution is very extensive, being found from the Northern States to the southern boundary of the Union; but it is most abundant in the Carolinas and Georgia. It is generally found in fields and open situations, on poor and gravelly soils, along gravelly streams, on hills, and sometimes in meadows. It flowers in June and July. It generally requires a good deal of room to show its characters, and is readily propagated by seeds or by dividing the roots.

The singular structure of the flower of the *ASCLEPIAS TUBEROSA* is such as to puzzle botanists; and it might as well be considered derandrous as monadelphous, the flowers appearing to have a double corolla. The inner one has five lobes, called nectaries or anthers. This structure, however, renders the genus very natural and easily recognizable.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Many estimable qualities are usually attributed to this very favorite plant and popular medicine; subtonic, diaphoretic, expectorant, diuretic, laxative, escharotic, carminative, antispasmodic, &c. It is a mild sudorific, acting safely without stimulating the body. The plant may also be confidently recommended as a mild cathartic, particularly suitable to the complaints of children, as it leaves the bowels in a tranquil condition; and as a certain diaphoretic, attended with no inconsiderable expectorant effect. The multitude, respectability, and strength of evidence in favor of these very desirable qualities are decisive. Its expectorant effect in pneumonia and catarrh is also substantiated by a multiplicity of corroborative facts.

The powdered root of the *ASCLEPIAS TUBEROSA* frequently acts as a mild purgative, but it is particularly valuable for its virtues as an expectorant and febrifuge; and in this respect its efficacy is amply confirmed by the testimony of nu-

merous physicians. From the successful employment of this plant for many years, several respectable practitioners have imbibed such confidence, that they extol it as possessing the peculiar and almost specific quality of acting on the organs of respiration, powerfully promoting suppressed expectoration, and thereby relieving the breathing of pleuritic patients, in the most advanced stage of the disease; and in pneumonia, fevers, recent colds, catarrhs, and diseases of the breast in general, this remedy has proved wonderfully efficacious. It should be taken in the form of a strong infusion, a teaspoonful every two or three hours.

Butterfly-weed is supposed to act specifically on the lungs, to promote suppressed expectoration, and to relieve the breathing and pains in the chest. In inflammation of the lungs it is always beneficial. It appears to equalize the circulation, and exert a mild tonic effect as well as a stimulant power over the excretories. It has been given in asthma, rheumatism, syphilis, and even in worms. It is said, when taken freely in a strong decoction till it vomits, to have cured the bite of a rattlesnake. Taken in that quantity, it creates a profuse perspiration, which carries off the poison.

But in flatulency, colics, and griping pains in the stomach, its benefits are most conspicuous. It has, in the hands of skilful practitioners, removed many misnamed liver complaints. For these purposes, it is best administered in powder; a teaspoonful every half-hour till relief is obtained.

In a low state of typhus fever, this plant has produced perspiration when other sudorifics had failed.

By many respectable families in the country this root has long been esteemed as a domestic medicine, and resorted to for relief of pains of the stomach from flatulence and indigestion; hence the vulgar name of *Wind-root*, by which it is known in some parts of the country, and from its color it is by some called *White-root*. By a perseverance for several weeks in the use of about one drachm of the powdered root every day, the lost tone of the stomach has been restored.

All these valuable properties of the *Asclepias tuberosa*, many of which are well attested, richly entitle the plant to a distinguished reputation.

The doses are from twenty to thirty grains of the powdered root, three times a day, or a gill of the decoction and infusion every few hours. A vinous infusion, and a decoction in milk, are also strongly recommended in some cases.

Asclepias Syriaca is remarkably odoriferous, and in Canada the French eat the tender shoots in spring like asparagus. The natives make a sugar of the flowers, gathering them in the morning when covered with dew, and collect the cotton from their pods to fill their beds. On account of the silkiness of this cotton, Parkinson calls the plant *Virginian silk*.



5251

QUERCUS agrifolia



CUPULIFERÆ.

The Oak Family.

No. 31.

QUERCUS RUBRA.

RED OAK.

Geog. Position. Northern parts of Europe and America.

Quality. Dry, astringent.

Power. Tonic, astringent, antiseptic.

Use. Diarrhoea, tertians, hemorrhages.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER CUPULIFERÆ.

Linnean Classification.

CLASS XXI. Monœcia. ORDER Polyandria.

AUTHORITIES. — Willd. Sp. Pl. 423. Persh. Fl. N. A. 426. Lindl. Fl. Med. 491. Barton, Lec. 232. Raf. Med. Fl., II. 235. Whittew. Med. Disc. 454. Lond. Disp. 343. Ec. Disp. U. S. 336. Eaton, Bot. 89, 384. Lond. Empe. II. 236. Thomson, Mat. Med. 476. Persh., II. Mar. Med., II. 197. Goss. Med. Bot. 586. Carson, Illoc. Med. Bot., II. 43. Gray, Bot. N. U. S. 418. Reisch, Fl. Ph. 667. Hæny, Med. Herb. 204. Koot, Mat. Med. 492. Wood, Class-Book, 454.

GENUS QUERCUS.

From the Celtic *quer*, excellent, and *oer*, a tree; so called emphatically on account of its leanness, and because the sacred mistletoe grew upon it. The more common Celtic name was *alor*, hence *Doud*.

SYNONYMS. — Le Chêne (Fr.), Die Eiche (Ger.), Eik (Dutch), Quercia (It.), Ralle (Sp.), Tyfa (Pov.), Dub (Russ.), Dub (Pol.), Ege (Dan.), Ek (Swed.).

THE ESSENTIAL CHARACTERS.

CALVS. *Sepals* regular and membranous, or scale-like.

CORDALA. None.

STAMENS. One — three times as many as the sepals, inserted into their bases.

OVARY. Adherent, seated within a coriaceous involucre (capsule) with several cells and several ovules in each. *Stigma* several, sessile, distinct.

FRUIT. A bony or coriaceous nut, more or less inclosed in the cupule.

QUERCUS RUBRA.

SEEDS. One, two, or three (most of the ovules being abortive) pendulous. *Albumen* wanting. *Embryo* large. *Cotyledons* fleshy, plano-convex. *Radicule* minute, superior.

Flowers generally numerous. **STERILE** in APRIL. **FERTILE** solitary, or two or three together, or in fascicles.

THE SECONDARY CHARACTERS.

QUERCUS.—**STERILE FLOWERS** in a loose ament. Calyx mostly five-cleft. **STAMEN** five-toil.—**FERTILE FLOWER.** Cupule cup-shaped, scaly. Calyx incorporated with the ovary, six-lobed. Ovary three-celled, two of the cells abortive. Style one. Stigma three. Nut (acorn) coriaceous, one-celled, one-seeded, surrounded at the base by the enlarged, cup-shaped, scaly cupule.

STAMINATE FLOWERS, EMBELLING. Calyx with five-cleft. Corolla none. **Stamen** five-toil. **PISTILLATE FLOWER.** Involucres of numerous scales united into a cap. Perianth single, closely investing the ovary, six-toothed. Ovary three-celled, two of them abortive. Style one. Stigma two-to five. Nut or acorn one-celled, one-seeded, coriaceous, surrounded at the base by the permanent inflated involucre.

THE SPECIFIC CHARACTERS.

QUERCUS RUBRA. Leaves on long petioles, smooth, obtusely sinuate. Lobes rather acute, dentate. Cap shallow and flat, smoothish. Acorn subovate.

Leaves long-petioled, oblong, glabrous, obtusely sinuate. Lobes acute, toothed serrated-serrulate. Cupule scarce firm, smoothish. Acorn subovate, tergal.

THE ARTIFICIAL CHARACTERS.

CLASS MONOCILL. Stamens apart from the pistils in different flowers upon the same plant. **ORDER POLYANDREA.** Trees, angiospermous, monocious. Fruit a nut (acorn) bony or coriaceous, three or less inclosed by a cupule. Leaves simple.

NATURAL HISTORY.

The Cupuliferæ constitute a large portion of the forests of the northern temperate regions, and of mountainous tracts within the tropics. The order comprehends the oak, the hazel-nut, the beech, and the chestnut, and can scarcely require much to be said of their history. The red oak is the most common species in the Northern States and in Canada. It is a lofty, wide-spreading tree, seventy feet in height, with a diameter of three or four. The leaves are six-to ten inches long, smooth on both sides, with deep and rounded sinuses between the narrow mucronated lobes. The flowers appear

in May, succeeded by very large acorns, contained in cups so shallow as rather to resemble saucers, and greedily devoured by wild and domesticated animals. The wood is reddish, coarse-grained, of little value as timber, but excellent for fuel. The bark is extensively used in tanning.

The galls of commerce are not the production of this species of *Quercus*; they are obtained from the *Quercus infectoria*, a species belonging to Asia Minor. The gall comes at the shoots of the young boughs, and is produced by a small hymenopterous insect or fly. The insect punctures the tender root with its sting, and deposits its egg in the puncture. (See *Materia Medica Asiatica*, No. 15.) This occasions a morbid irritation in the vessels of the part; the gall rises in a few hours, and attains its full size in a day or two before the larva is hatched; the egg grows with the gall, and it is by the irritation which it keeps up—not, as has been supposed, by the maggot feeding on the juices of the plant—that the morbid excitement is maintained in the vessels of the part, sufficient for the production of this kind of vegetable wen. The galls are gathered before the larva within them changes to a fly and cuts its way out; for when this has happened the galls are greatly deteriorated.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Almost every part of the Oak is astringent, but the bark only is official; and as its epidermis is perfectly inert, it is taken for medical purposes from the smaller branches, the epidermis of which is still thin, and scarcely cracked. The bark cut in spring is preferable to that cut in winter, as it contains four times the quantity of the astringent principle or tannin.

Oak bark is inodorous, has a rough, astringent taste, and yields its virtues to both alcohol and water. The watery infusion is affected by all those tests which indicate the presence of gallic acid, tannin, and extractive. Sir H. Davy found that one ounce of the inner cortical part of young oak bark affords by lixiviation one hundred and eleven grains of solid matter, of which seventy-seven are tannin; the cellular integuments, or middle colored part, yields forty-three grains only of solid matter, of which nineteen are tannin; and the epidermis furnishes scarcely any quantity either of tannin or of extractive. The quantity of tannin, however, varies according to the size and age of the trees and the season at which they are barked. It has been discovered that the infusion of oak bark does not precipitate tartarized antimony or the infusion of Santa Fe cinchona, which resembles the official red cin-

ebon, although both of these are precipitated by infusion of galls. The infusion of oak bark, however, forms a precipitate with infusion of yellow cinchona bark.

Oak bark is tonic and astringent. It has been given, united with bitters and aromatics, with seeming advantage in intermittents; but it is in every respect inferior to cinchona, and cannot be depended on. It is, however, useful in obstinate diarrhoea and alvine hæmorrhages; and it is strongly recommended in the malignant coryza (*zangheri*) of infants, when, in spite of keeping the bowels regular and the use of codlins, the child becomes weak and pallid.

The following is the usual form of exhibition:—

Take of oak bark an ounce; water two pints. Boil down to a pint and strain. From oak bark, thus treated, the greater part of its astringent matter is extracted. The decoction is nearly insipidous, has a brown color, and the austere taste of the bark. It reddens tincture of litmus, and is precipitated by solutions of isinglass, infusion of yellow cinchona bark, the carbonates of the alkalis, the aromatic spirit of ammonia, lime-water, and solutions of sulphate of iron, acetate of lead, oxymuriate of mercury, and sulphate of zinc, which are therefore incompatible in formula with it. The precipitates produced by the last two salts do not take place for a considerable time. It does not precipitate tartar emetic in solution.

The decoction is recommended as a local astringent; it is used as a gargle in cynanche and relaxation of the uvula; as an injection in passive uterine hæmorrhages, epistaxis of aged persons, in leucorrhœa, and the bloody discharge which often remains after miscarriages. It is also a useful wash in piles and proidentia recti.

The extract of oak bark is highly recommended for the cure of rupture. After a rupture has been reduced, bathe the part and apply the truss three or four times a day till cured.

Galls are the most powerful of the vegetable astringents. They are seldom used as an internal remedy, although, in combination with bitters or aromatics, they have been given in obstinate diarrhoeas, passive intestinal hæmorrhages, and intermittents. They are frequently ordered in the form of gargles and injections; and an ointment formed of galls in fine powder, with eight parts of simple ointment and a small proportion of powdered opium, is a useful application to blind piles. For internal exhibition, the dose of galls may be from ten grains to one scruple, given twice or thrice a day.

Proof spirit dissolves tannin. Consequently the following tincture of galls contains all the astringency of the galls, and may be employed in the same cases. The dose is from one to three drachms. Take of galls, in powder, two ounces; proof spirit, sixteen ounces. Macerate for seven days, then filter through paper.



Nº 22

CAPSICUM ANNUUM.

Red Pepper. Capsicum Baccatum.



Fig. 10.
Sambucus racemosa L.
Fruiting branch.

SOLANACEÆ.

The Nightshade Family.

No. 32.

CAPSICUM ANNUM.

Red Purpur. *Cayenne Pepper.*

Geog. Position. East and West Indies.

Quality. Pungent.

Power. Stimulant, aperient.

Use. Rheumatism, dyspepsia, colic, cholera.

BOTANICAL ANALYSIS.

Natural Classification.

Order SOLANACEÆ

Linnean Classification.

Class V. *Pentandria.* Order *Monogynia.*

APPROPRIATE. Lin. Sp. Pl. 370. Willd. Sp. Pl. 1660. Lindl. Fl. Med. 509. Harms. Lec. 68. No. 135. Raf. Med. Flor. 12. 203. Whittac. Med. Diss. 34. Linn. Dig. 235. U. S. Disp. 178. En. Disp. U. S. 115. Erson. Bot. 47. 150. Linn. Ence. Pl. 169. Ballard and Gassal. Med. Med. 150. Thomson. Mat. Med. 51. Pereira. El. Mat. Med. II. 333. Griff. Med. Bot. 457. Gray. Bot. N. U. S. 352. Benth. Fun. Pl. 448. Howard. Bot. Med. 227. Dickey. Med. Herb. 125. Kear. Mar. Med. 286. Wood. Class. Bot. 417.

GENUS CAPSICUM

From the Greek *akros*, to fill, on account of the taste of the fruit.

SYNONYMS. — Le Duesot (Fr.). Der Spanische Pfeffer (Ger.). Spanischpfeffer (Dutch). Il Pimento (It.). El Pimenton (Sp.). Pimentão (Port.). Yallo-Capo-Molano (Malch.). Pevet (Rus.).

THE ESSENTIAL CHARACTERS.

CAUL. *Sepals* four—five, more or less united, mostly persistent.

COROLLA. Regular. *Limb* four—five cleft, plaited in revivification, deciduous.

STAMENS. Four—five (sometimes one abortive), inserted on the corolla alternate with its segments. *Anthers* bursting longitudinally, rarely by terminal pores.

OVARY. Free (superior), two-celled, with the placenta in the axis. *Styles* and *stigmas* united into one.

FRUIT. A capsule or berry.

SEEDS. Numerous. *Embryo* curved, lying in fleshy albumen.

THE SECONDARY CHARACTERS.

CAPSICUM. Calyx five-cleft, erect, persistent. Corolla rotate, tube very short, limb plaited, five-lobed. Anthers connivent. Fruit capsular, dry, inflated, two-three-celled. Seeds flat, very acrid.

Corolla wheel-form. Berry jaliscoe, inflated. Anthers converging. Calyx angular.

THE SPECIFIC CHARACTERS.

CAPSICUM ANNUM. Stem herbaceous, angular, branching above. Leaves ovate, acuminate, entire, petiolate, glabrous. Peduncle smooth, axillary. Calyx angular, with short acute lobes. Corolla-lobes spreading, longer than the stamens. Berry oblong or subglobose, red, erect or pendulous.

Stem herbaceous. Peduncles solitary.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. Stamens five. Order MONOGYNIA. Monopetalous. Flowers inferior. Corolla regular. Stamens alternate with petals. Fruit a capsule or berry. Cells two, many seeds. Estivation plicate.

NATURAL HISTORY.

The **CAPSICUM ANNUM** is an herbaceous, branching annual plant, which, though a native of both the Indies, is cultivated in nearly all parts of the world. It was introduced into England in 1548, and was highly esteemed in Gerard's time.

The stem is herbaceous, roundish, smooth, crooked, branching, and rising two or three feet in height. The leaves are ovate, smooth, entire, placed on long footstalks in an irregular order. The flowers are peduncled, axillary, solitary, and white. The calyx is persistent, tubular, and divided at the edges into five short segments. The corolla is wheel-shaped, five-cleft, the segments pointed and plaited. The filaments are short, tapering, with oblong anthers; and the germen is ovate, supporting a slender style, which is longer than the filaments, and terminated by a blunt stigma. The fruit is a long, conical, pendulous, pod-like berry, of a shining orange-scarlet or sometimes yellow color, two-celled, and containing a dry spongy pulp with several flat kidney-shaped seeds.

The plant is cultivated for its fruit, which is used in a green state for pickling, and ripe for mixing with other ingredients, as tomatoes, &c., to form sauces. They are also dried and

ground, and used like Cayenne pepper. The seed is sown in the end of March or beginning of April, on a moderate hot-bed, and covered a quarter of an inch. When the plants are two or three inches in growth, some are transplanted into a new slight hot-bed to forward them for final planting, or, in default of such hot-bed, they are placed in a bed of light, rich earth, from twelve to eighteen inches apart, where they are finally to remain till the end of May, and protected during the night by mats. They will flower in July and produce plenty of pods, which ripen in October.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The fruit of the *Capsicum* or Cayenne pepper, possesses an aromatic odor, which is somewhat impaired by drying, and an aromatic, extremely pungent, acrimonious taste, setting the mouth, as it were, on fire, and the impression remaining long on the palate. These sensible qualities are imparted to water, alcohol, and ether. Half a drachm of the powder infused in three ounces of boiling water lost twelve grains. The infusion is precipitated by infusion of galls, and alcohol dissolves the precipitate. It is only precipitated by nitrate of silver, perchloride of mercury, acetate of lead, the sulphates of iron, zinc, and copper, the alkaline subcarbonates, and alum; and is not altered by the mineral acids, the solution of potassa, nor diluted potassa. The ethereal tincture, when evaporated on the surface of water, left an orange-colored resin, in which the piquancy of the *Capsicum* was concentrated. These experiments point out the substances which are incompatible in formula with infusions of *Capsicum*, and has led to the conclusion that it contains chiefly cinechona, resin, vegetable mucus, and an acid principle, a fixed oil, in which the acrimony resides. When sold in powder, *Capsicum* is sometimes adulterated with red lead, which, however, is readily detected.

The berries of the *Capsicum* are a powerful stimulant unaccompanied with any narcotic property. They have been successfully given in atonic gout, in dyspepsia, when accompanied with much flatulence, in tympanitis and paralysis. In dropsies and other cachectic complaints, when chalybeates are indicated, a small portion of powdered *Capsicum* is recommended as an excellent addition; and it has been employed with remarkable success in obstinate intermittents. The experience of eminent practitioners of its efficacy as an adjunct to cinchona in intermittents, is conclusive. It has also been found very beneficial in lethargic affections, and one of the most popular tinctures of the day, as a specific for these affections, is but an infusion of *Capsicum* (with some other herbs) in proof spirit, with a small quantity of sulphuric acid.

The diseases, however, in which *Capsicum* has been found most useful, are typhoid maligna, and scarlatina maligna, in which it is given both internally, and used as a gargle. Its sensible effects are heat in the stomach and a general glow over the body, without much affecting the pulse, and as a gargle it cleans without impeding the healing of the ulcers of the fauces; and in palsy of the tongue it is strongly recommended. Cataplasms of *Capsicum* operate as powerful rubefacients in chronic rheumatism, palsy, gout, &c., without blistering the skin, and are likewise used to relieve the coarct and delirium, which almost constantly attend tropical fevers. The diluted juice of the fruit is said to be a sovereign remedy in ophthalmia from relaxation.

Capsicum has become notorious as a principal article in the practice of Thomsonian doctors, who affirm that it retains the vital heat, and causes a free perspiration; they boast of employing it in all diseases, in doses of half to one teaspoonful, with good effect, to have cured agues, fever, &c. with it, and to have found it always harmless.

The fruit of *Capsicum*, commonly called red pepper, is gathered when ripe, dried in the sun, pounded, and mixed with salt; it is then kept stoppered in bottles, and is commonly known by the name of Cayenne pepper. A mixture of sliced cucumbers, shallots, or onions, cut very small, a little lime-juice and Madeira wine, with a few pods of bird pepper, *Capsicum baccatum*, well washed and mixed with liquor, seldom fails to provoke the most languid appetite in the West Indies. It is there called *Mau-drum*. Gathered fresh from the plant, the pods of all the species are liberally used in the East and West Indies to assist digestion and correct flatulencies. For these purposes only is the plant or its fruit useful in food; it is scarcely serviceable to the healthy, but it is medicinal to the sick, stimulating the stomach and exciting the nerves, particularly in lethargic and paralytic affections. The powder of the berries sprinkled in socks will cure cold feet; and, as a weak wash, it is said to be a specific for relaxed sore eyes.

Many varieties of this species of *Capsicum* enter into the composition of Cayenne pepper, but certainly the best, which is from the West Indies ready prepared, is made from the *Capsicum baccatum*, or bird pepper. Cayenne pepper is often mixed with muriate of soda, and sometimes with a less innocent substance, the red oxide of lead. This fraud may be discovered by boiling some of the suspected pepper in vinegar, and, after filtering the decoction, adding to it a solution of sulphuretted hydrogen gas, which will throw down a black precipitate; or sulphate of soda may be used, in which case, if the pepper contain oxide of lead, a white precipitate will be produced, which, after being dried and exposed to heat, mixed with a little charcoal, will afford a globule of lead.





57. 58

ATROPA BELLADONNA

20748314 AD, 1942-1943

axis: States and citizens united into one.



ATROPA BELLADONNA

SOLANACEÆ.

The Nightshade Family.

No. 33.

ATROPA BELLADONNA.

DRACLY NIGHTSHADE. *Drac.*

Geog. Position. Europe.

Quality. Insipid, poisonous.

Power. Narcotic, anodyne.

Use. Dysentery, fistula, convulsions, epilepsy.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER SOLANACEÆ.

Linnean Classification.

CLASS V. Pentandria. ORDER Monogynia.

AUTHORITIES.—*Lix.* Sp. Pl. 560. *Willd.* Sp. Pl. 1316. *Woods.* Med. Bot. 230. *Lind. Flor. Med.* 568. *Barton.* Lec. 72, No. 37. *Whist.* Med. Diet. 85. *Leand. Disp.* 209. *U. S. Disp.* 143. *Er. Disp.* U. S. 87. *Enon.* Bot. 47, 131. *Leand. Encyc.* Pl. 114. *Ballard and Garrod.* Mat. Med. 543. *Thomson.* Mat. Med. 436. *Perrin.* El. Mat. Med. 131. *Guss.* Med. Bot. 486. *Carson.* Elem. Med. Bot. II. 18. *Gray.* Bot. N. U. S. 333. *Doeh.* Fern. Ph. 543. *Henry.* Med. Herb. 85. *Wood.* Class-Book, 487.

GENUS ATROPA.

From the Greek *Argemone*, the name of one of the three Fates in Grecian mythology, whose office it was to cut the thread of human life; this office the poisonous fruit of this plant is also well adapted to perform.

SYNONYMS.—*La Belladonna* (Fr.), *Die Wollkirsche* (Ger.), *Doodkruis* (Holl.), *Atropa* (It.), *Atropa* (Sp.), *Belladonna* (Port.), *Dochmaja Winkaja* (Russ.).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four—five, more or less united, mostly persistent.

COROLLA. Regular. *Limb* four—five-cleft, plaited in aestivation, deciduous.

STAMENS. Four—five (sometimes one abortive), inserted in the corolla alternate with its segments. *Anthers* bursting longitudinally, rarely by terminal pores.

OVARY. Free (superior), two-celled, with the placenta in the axis. *Style* and *stigma*s united into one.

FRUIT. A capsule or berry.

SEEDS. Numerous. *Embryo* curved, lying in fleshy albumen.

THE SECONDARY CHARACTERS.

ATROPA. *Calyx* persistent, five-cleft. *Corolla* campanulate. *Stamens* five, distant. *Berry* globose, two-celled, sitting on the calyx.

Corolla bell-shaped. Stamens distant. Berry globose, two-celled, sitting on the calyx.

THE SPECIFIC CHARACTERS.

ATROPA BELLADONNA. *Stem* herbaceous. *Leaves* ovate, entire. *Berries* black.

Stem herbaceous, bristly. Leaves ovate, entire. Berries black and poisonous.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. **STAMENS** five. **ORDER** MONOGYNIA. **MONOPETALOUS.** *Flowers* inferior. *Corolla* regular. *Stamens* alternate with petals. *Fruit* a capsule or berry. *Cells* two, many seeds. *Retraction* plicate.

NATURAL HISTORY.

This plant is an exotic perennial, formal, however, in many parts of this country, particularly in shady places where the soil is calcareous, flowering in June, and ripening its berries in September. The root is thick, fleshy, and creeping; sending up several erect, purple colored, herbaceous, annual stems about three feet in height, branching, leafy, round, and somewhat fleshy. The leaves are lateral, in pairs of unequal size, decurrent, on short petioles, egg-shaped, pointed, entire; of a dusky-green color above and paler below; soft and fatty to the touch. The flowers are supported on one-flowered, solitary, axillary peduncles; large, drooping, and having a faint narcotic odor: the calyx is green, persistent, and deeply divided into five ovate segments; the corolla bell-shaped, of a lurid blue externally, and within dusky or brownish-violet, with a yellow, variegated base, inclosing five filaments shorter than the corolla, nodding, and bearing large anthers; with a pyramidal germ, supporting a long, simple style and two-lobed stigma. The ripe berry is large, seated within the calyx, roundish, with a longitudinal furrow on each side, shining, smooth, and of a deep purple color; containing many seeds, and a sweetish, violet-colored juice.

The whole plant, and especially the berries, are poisonous. Nature, however, has been more parsimonious in her warnings with respect to this plant than to others of the same natural family. Neither the smell nor the taste is offensive; and if the color of the flowers proves in some degree a repellent, that of the fruit is in an equal degree at least attractive and inviting. Hence children, and persons ignorant of the qualities of this plant, often suffer from eating the berries.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The leaves of *ATROPA BELLADONNA* are inodorous; the taste is slightly nauseous, sweetish, and subacid. They do not lose their active properties by drying. Several eminent chemists have found that they contain a substance resembling animal albumen, salts with a base of potassa, and a bitter principle, soluble in alcohol, on which their narcotic quality depends; and which has since been ascertained to be an alkali, named *Atropia*. The seeds yield the largest proportion of this principle. Every part of the plant is poisonous. The symptoms induced are those of intoxication, not accompanied with fits of laughter and violent gestures; great thirst, difficulty of deglutition, nausea, dilatation of the pupil, with the eyelids drawn down; redness and tumefaction of the face, stupor or delirium, a low and feeble pulse, paralysis of the intestines, convulsions, and death. The best mode of averting these fatal effects is by exhibiting emetics of sulphate of zinc or of copper, and assisting their operation by irritating the fauces; then evacuating the bowels by active purgatives and glisters; and following these by large doses of vinegar and other vegetable acids. The recovery, however, is always slow. If experiments by eminent physicians be correct, lime-water is an antidote for poisoning by this plant.

The deleterious effects already enumerated demonstrate that *ATROPA BELLADONNA* is a very powerful narcotic. It is also diaphoretic and diuretic. When injudiciously or incautiously given, or when it is taken for a considerable length of time, even in small doses, it is apt to induce a dryness and stricture of the pharynx and adjoining parts of the oesophagus, sickness, vertigo, and dimness of sight; symptoms sufficiently indicative of the necessity of suspending its use for some time, and giving it in smaller doses when it is resumed. The internal administration of this well-known plant appears to have been suggested by the advantages resulting from its external application. Several learned practitioners have found this plant very serviceable in the early stage of scirrhus and cancerous affections. Others have asserted that it cures hydrophobia; its efficacy in this disease is, however, very much

doubted, for it produces one of the most distressing symptoms of that malady, — thirst; together with constriction of the pharynx. It has also been given with considerable advantage in obstinate intermittents, chronic rheumatism, gout, paralysis, amebiasis, epilepsy, and pertussis; in the last disease Dr. Good speaks of its efficacy from his own experience.

Dr. John Bailey, in his observations on the use of *BELLADONNA* (8vo, 1817), asserts that it has the power of allaying convulsions arising from scrofulous irritation; and its beneficial effects in neuralgia facialis have been well ascertained. Though the powers of this plant as a narcotic are certainly great, yet they have not been found sufficiently constant and permanent to insure its general use. Externally, used either as a fomentation, or the dried leaves powdered and sprinkled over the parts, it is of singular efficacy in diminishing the pain of cancerous and ill-conditioned sores; it obtunds the pain of hemorrhoids; and as the infusion, when dropped into the eye, produces a great dilatation of the pupil, it has been proposed, and in many instances found useful, for dilating the pupil previous to the extraction of the cataract; and the extract has now become exceedingly popular, and is commonly used by most practitioners in this country for the same purpose. The application gives no pain; and it is well adapted to make examination of the state of the lens and capsule, previous to determining on the operation. This plant is also frequently administered internally in scrofulous ophthalmia and inflammation of the retina. It has, however, been ascertained that this power is destroyed by alkaline solutions. Its operation appears to be limited to the radiated fibres of the iris. By use it loses its effect, but regains it after the application has been for a short time suspended.

Dr. Hahneman and Professor Koeber have stated that *ATROPA BELLADONNA*, given during the prevalence of scarlatina, has the power of protecting the individual who takes it from the infection. Dr. Randkahn, physician to the Orphan Hospital at Langendorf, in Prussia, has confirmed this fact, by experiments on one hundred and sixty children exposed to the contagion in the above-named hospital. The leaves of *ATROPA BELLADONNA* furnish the best form of exhibition. Dr. Paris observes the recent leaves, powdered and made into an ointment with an equal weight of lard, properly applied, prevents priapism, and relieves chordee more effectually than any application which has been proposed. Externally, the leaves make a good assuaging poultice. *BELLADONNA* may be given in substance, beginning with one grain of the dry leaves powdered, and gradually increasing the dose to twelve or fourteen grains; or of an infusion made with one scruple of the dried leaves in ten fluid ounces of boiling water; two ounces may be given daily and the dose cautiously increased.



XI 34.

MYRICA CERIFERA.

Wax Myrtle.



MYRICACEÆ.

The Sweet Gale Family.

No. 34.

MYRICA CERIFERA.

BAYBERRY. *Wax Myrtle.*

Geogr. Position. United States. England.

Quality. Bitter, wax-bearing.

Power. Astringent, emetic.

Use. To cleanse the stomach and bowels.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER MYRICACEÆ.

Linnean Classification.

CLASS XXII. *Diccia.* ORDER *Tetrandria.*

ACTIVITIES.—*Linn. Sp. Pl.* 1613. *Willd. Sp. Pl.* 743. *Pursh, Flot. N. A.* 229. *Lindl. Flou. Med.* 205. *Beyliew, Med. Bot.* III. 32. *Bartow, Loc.* 215. No. 394. *Ref. Med. Flou.* II. 344. *Witcham, Mod. Med.* 185. *U. S. Disp.* 287. *Ec. Disp. U. S.* 258. *Emery, Bot.* 52. 328. *Leal. Kewy.* Pl. 630. *Thomson, Mar. Med.* 4115. *Pursh, El. Mar. Med.* 787. *Griff. Med. Bot.* 388. *Guss., Bot. N. U. S.* 420. *Brach, Fam. Pl.* 652. *Howard, Bot. Med.* 272. *Kost, Mat. Med.* 471. *Wood, Class-Book.* 479.

GENUS MYRICA.

From the Greek *μύρα*, to flow; because some of the species are natives of river-banks and inundated places.

SYNONYMS.—*Lo Czer (Fr.)* Der Wachsberr (Ger.), Wachsberrspiss (Dutch), Waskowick (Econ.), Pors (Dan.), Serr, and Swed.

THE ESSENTIAL CHARACTERS.

CALYX.

COROLLA. None.

STERILE FLOWERS. Stamens two-six. Anthers two-four-celled, opening longitudinally.

FERTILE FLOWERS. Ovary one-celled, one-ovuled, surrounded by several hypogynous scales. Stigma two-subulate, or dilated and petaloid.

FRUIT. Drupaceous or dry.

SEEDS. Solitary, erect, without albumen.

THE SECONDARY CHARACTERS.

MYRICA. *Flowers* dioecious. *Aments* ovate-oblong. *Scales* loosely imbricate, lunate. **SPECIAL FLOWERS.** *Stamens* four-six, short, erect. *Anthers* large, four-valved. **FERTILE FLOWERS.** *Ovary* one, superior. *Styles* two, spreading. *Stigmas* two, acute. *Drupe* one-celled, one-seeded.

STAMINATE FLOWERS. *Ament* oblong. *Scales* lunate. *Stamens* four-six. *Anthers* four-valved. **STIGMATE FLOWERS.** *Scaly* like the staminate. *Stigmas* two. *Drupe* or berry one-seeded.

THE SPECIFIC CHARACTERS.

MYRICA CERIFERA. *Leaves* glabrous, cuneate-oblong, rather acute or obtuse, distinctly petiolate, margin entire or remotely dentate above, paler and with distinct veinlets beneath. *Aments* contemporary with the leaves, lateral, naked. The staminate flower larger, with lax, roundish scales. *Fruit* spherical, distinct, clustered, naked, covered with wax.

Leaves wedge-lanceolate, acute, with distant serratures at the apex. *Staminate aments* lax. *Scales* acute. *Fruit* small, globose, covered with a whitish wax, in a early state.

THE ARTIFICIAL CHARACTERS.

CLASS DIOECIA. *Stamens* apart from the pistils in different flowers upon different plants. **ORDER TETRANDRIA.** *Shrubs* angiospermous, dioecious. *Ovary* one-seeded, not parasitic. *Stamens* four-six. *Stigmas* two. *Leaves* paricete, with resinous glands.

NATURAL HISTORY.

This interesting and useful shrub is a native of the United States, and most abundant on the sandy sea-coast, though frequently found in dry woods and fields. It varies much in size, from two feet to eight. The stem of the Bayberry is covered with a grayish bark and has a very branching top with numerous dry-looking, scattered leaves, varying from wedge-lanceolate to linear-lanceolate, on short petioles. The fertile plants produce small aments of flowers, succeeded by dense, irregular clusters of a small, round, dry, berry-like fruit. This fruit consists of a globular stone inclosing a kernel, and covered with a coating of whitish wax, which being separated by boiling water constitutes the Bayberry tallow or Myrtle wax of commerce.

The plant growing in a sandy soil has a thicker bark upon the root than that found in other localities, and is considered of a better quality. The roots should be collected early in the spring or late in the fall, freed from dirt, and pounded with a mallet or club to separate the bark. This should be thoroughly dried, without exposure to a wet or damp atmosphere, and reduced to powder, previous to being used.

All the species of *Myrica* grow well in peat soil, or sandy loam, in a moist situation. They are increased by seeds or layers, but not readily by cuttings.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Various experiments prove that the plant *Myrica caribæa* contains tannin, resin, gallic acid, and mucilage. It is also astringent, emetic, pectoral, uricæ, submucous, cephalic, vermifuge, menagogue, stomachic, &c.

There is, perhaps, no form of disease (so valuable and important is the plant under consideration) in which the Bayberry, if properly administered, will not prove beneficial. In many parts of the New England States, the decoction is in common use as a remedy in scarlet fever, and it is usually administered without any regard to quantity. If the throat is affected, it is also employed with very great advantage as a gargle. Instances are not uncommon where parents have cured their children of this distressing and dangerous complaint by this article alone, after the attending physicians had given them up as hopeless.

This plant is also a very valuable remedy in diarrhoea, dysentery and dropsy. The decoction, given in the dose of a tea-cupful and repeated two or three times, will rarely fail to effect a cure. This decoction is also eminently serviceable in jaundice, and is effectual in removing all obstructions of the liver, spleen, kidneys, and urinary passages.

The tea is a useful wash in badly conditioned sores, and should always be employed, where its pungency is not an objection. The powder makes a good dentifrice, and not only cleanses the teeth by its mechanical action with the brush, but renders the gums more sound and healthy. A teaspoonful of the fine powder taken in water once a day, for a few days in succession, will remove the most offensive breath by correcting the secretions. Scented with the fragrant oils, as golden-rod or spicy wintergreen, it furnishes a delightful snuff, which may be used to advantage in headaches and colds; it clears the head and relieves the headache, and operates as a stimulant, sometimes causing violent sneezing.

Myrtle wax or Bayberry tallow of commerce is a concrete

oil, of moderate hardness and consistence; it has in part the tenacity of beeswax, though without its unctuousity; it also possesses with these properties the brillianess in some degree of the resins. The color of this wax is a pale green; the shades of the different species of *Myrtica* are somewhat varied; in most of them the green has a tendency to a dirty gray, in others it is lighter and more transparent. Its specific gravity is about 1.0150. It is fused at a temperature of 109° Fahr. By sufficiently increasing the heat, it burns with a peculiarly clear and white flame, producing little smoke, and during the combustion emits an agreeable aromatic odor.

Chemists and physicians who have paid particular attention to the properties of the Myrtle wax furnished by the different native species of the genus *Myrtica*, have made some very interesting observations.

1st. That water has no action upon it, either when cold or at the boiling point.

2d. Alcohol, when boiling, dissolves it sparingly, and it precipitates again in cooling.

3d. Sulphuric ether, at the common temperature of the atmosphere, dissolves it only in small quantities, but acts upon it rapidly when boiling, the greater part of which separates as the ether cools.

4th. Rectified oil of turpentine, at the common temperature of the atmosphere, softens the wax; assisted by heat, one hundred grains of the spirit dissolve six grains of the wax, part of which separates as the fluid cools.

5th. When boiled with liquid potassa, the fluid becomes turbid, and the wax rises to the surface, nearly without color, in a flocculent form. In this saponaceous state it has lost its inflammability and fusibility, and forms an opaque solution with water.

6th. Pure ammonia exhibits with it phenomena in many respects similar to those produced by the fixed alkalis, though in a less degree than that resulting from the action of potash.

7th. The mineral acids have but little effect upon it; the sulphuric, when assisted by heat, converts it into a dark brown mass; the nitric changes the color from green to a pale yellow, and by a long digestion in muriatic acid it becomes a bright orange.

Bayberry tallow possesses a very considerable astringent quality, and in an eminent degree that of a narcotic or anodyne. To the taste the grain is astringent and somewhat styptic, making a very sensible and lasting impression on the fauces, and its odor is pleasant and balsamic. Its astringent quality is supposed to reside in the kerack, or the covering which surrounds the seed, and which gives a very fine lake color in the fresh state. This property is attributed to gallic acid, but the experiments are not satisfactory.



5752.

BORAGO OFFICINALIS.

Common Borage

Keywords: Health care; Health status; Quality of life



LEUCOPHYLLA ALBA (L.) DC.

Leucophylla alba

BORAGINACEÆ.

The Borage Family.

No. 35.

BORAGO OFFICINALIS.

BORAGE. *Common Borage.*

Geog. Position. Europe.

Qualif. Oleraceous.

Power. Stomachic, diaphoretic.

Use. The herb and flowers in melancholy.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER BORAGINACEÆ.

Linnean Classification.

CLASS V. *Peucezoides.* ORDER Monogynia.

AUTHORITIES. — *Lin. Sp. Pl.* 191. *Link. Fluc. Med.* 481. *Whitlow, Med. Disc.* 23. *U. S. Disp.* 1206. *Falcon, Bot.* 43, 153. *Leach, Encyc.* Pl. 122. *Posselt, El. Mar. Med.* 537. *Gris. Med. Bot.* 569. *Gray, Bot. N. U. S.* 234. *Wood, Class. Book.* 420.

GENUS BORAGO.

Synonymized by Apéles to be an alteration of BORAGO, from Lat. *borax*, salt, and *ago*, to suffer; on account of its cordial qualities.

SYNONYMS. — *Bourache* (Fr.), *Borago* (Ger.), *Bernagie* (Dutch), *Boraggine* (It.), *Boraja* (Sp.), *Boragum* (Port.), *Ogortschaja trawa* (Russ.), *Borak* (Ind.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals five, regular, more or less united at base, persistent.

COROLLA. Petals five, regular (very rarely irregular), united at base, hypogynous, imbricate in aestivation.

STAMENS. Five, inserted into the corolla and alternate with its lobes.

OVARY. Deeply four-lobed, the style arising from the base of the lobes.

FRUIT. Nuts or achenia four, distinct.

SEEDS. Solitary, without albumen. *Embryo* with a superior radicle. *Cotyledons* plano-convex.

THE SECONDARY CHARACTER.

BORAGO. *Calyx* five-parted. *Corolla* rotate, with acute segments. *Orifice* crowned. *Filaments* converging. *Achenia* rounded, imperforate at base, inserted lengthwise into an excavated receptacle.

Gerdia wheeliform. *Spermat* acute, the throat closed with rays. *Filaments* converging. *Nuts* rounded, closed at the base, rapese, inserted into an excavated base.

THE SPECIFIC CHARACTER.

BORAGO OFFICINALIS. *Leaves* ovate, alternate, the lower ones petiolate. *Calyx* spreading. *Peduncles* terminal, many-flowered.

Leaves alternate. *Calyx* spreading.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. **ORDER MONOGYNIA.** *Monopetalous.* *Flowers* inferior. *Corolla* regular. *Herb* (rarely shrubby). *Stamens* alternate with petals. *Fruit* four naked achenia. *Leaves* rough.

NATURAL HISTORY.

All the species of the **BORAGO** tribe are exotic in America, and natives principally of the temperate countries of the northern hemisphere of the eastern continent. They are extremely abundant in all the southern parts of Europe, the Levant, and Middle Asia. In the arctic circle they are less frequent, and almost disappear in the tropics. A few species only are found in such latitudes; and in North America, introduced on account of the beauty of the flowers, they are less abundant than in Europe.

BORAGO OFFICINALIS is an annual and sometimes a biennial succulent plant, native of Europe, and in the United States a common inhabitant of the garden, and of cultivated grounds. The stem is herbaceous, straight, and furnished with rough hair; radical leaves very large, oval, and supported by long canaliculate petioles; caulinary leaves sessile, oval, lanceolate, and hairy; flowers blue, paniculate, distant from each other at the extremity of the branches; corolla rotate, orifice closed by six connivent, lanceolate, and acute processes; anthers close to each other. The whole plant is rough, erect, three feet high, with terminal clusters of handsome sky-blue flowers,

which make a beautiful appearance, and are produced for several months in succession.

The common Borage is raised from seed; it loves a dry soil. This plant will grow even when transplanted, but it prospers best when it remains where sown. Where the young leafy tops and flower-spikes are in demand, permit the stem to run up.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

BORAGO OFFICINALIS has scarcely any smell, and possesses an herbaceous and mucilaginous taste. All parts of the plant contain a mucilaginous substance; a matter containing nitrogen, soluble in water, and insoluble in alcohol; acetate and other salts of potassa; salts of lime and nitrate of potassa. To these constituents the plant owes all its active principles. The French formerly held this plant in very high estimation, and considered it one of the four famous cordial flowers, but among the moderns it has fallen into neglect.

An infusion of the leaves and flowers sweetened with honey is frequently employed as a demulcent, refrigerant, and gently diaphoretic drink in catarrhal affections, rheumatism, diseases of the skin, &c.

A water distilled from the flowers of this plant is held in great esteem as a cordial and strengthener; it will, however, produce but little benefit if the constitution is not at the same time improved by the judicious employment of a proper diet, air, exercise, and clothing.

The expressed juice of the stem and leaves, or a sirup, may be used with great benefit in all putrid and pestilential fevers, to resist and expel the morbid matter. It is also serviceable in obstinate coughs, catarrhs, and affections of the lungs. Dose, from two to four ounces.

The flowers made into a conserve were formerly recommended in putrid malignant fevers, and hypochondriacal complaints; they remove obstructions, and have a very beneficial effect in jaundice. They may also be applied externally with great advantage as an emollient. In a great number of inflammatory cases, Borage is frequently employed as a demulcent, diuretic, and sudorific; it is of a remarkable cooling nature, and consequently may be used with success, particularly in inflammation of the eyes externally, and inwardly in fevers, as above.

The capability of sustaining the health, vigor, and strength of the system in man upon a diet purely vegetable, is established beyond the possibility of doubt. When this food is in sufficient quantity, and of a good quality, more robust, active,

and vigorous frames, and a greater amount of general health, than are presented by the individuals who make use of it, can scarcely be met with in the inhabitants of any other country, or among any other classes of society, whatever may be the nature of their diet. Although vegetable aliment requires a longer time to digest in the stomach than that from the animal kingdom, and notwithstanding the latter presents a larger amount of nutritive matter in a smaller bulk than the former; yet it is indisputable that the human system can derive from vegetable food as great a quantity of suitable nourishment as from animal, while the former produces much less excitement and heat, and is therefore far less liable to produce overfulness of the bloodvessels, or to predispose the organs to disease. As a general rule, it will be found that they who make use of a diet consisting chiefly of vegetable substances, properly cooked, more especially the farinaceous seeds and roots, have a manifest advantage in looks, strength, and spirits over those who partake largely of animal food; they are remarkable for the firm, healthy plumpness of their muscles, and the transparency of their skins. This statement, though somewhat at variance with popular opinion, is amply supported by experience.

Vegetable food contains gluten, starch, and gum.

Vegetable gluten is one of the proximate principles of vegetables; it is contained in all the farinaceous seeds, and in many of the roots, leaves, and fruits of various plants. It is the principle which imparts to flour the property of fermenting and making bread. Of the nutritive properties of gluten, distinct from its other vegetable principles, but little is known. The superior nutritious power of wheat-flour, which contains a greater abundance of gluten than all the other farinaceous substances, sufficiently proves, that, in combination with starch, it is highly nourishing.

Starch is another of the proximate principles of vegetables; it is obtained from all the farinaceous seeds and roots. Of its nutritive properties there can be no doubt, though it is seldom used in a separate state as food. It is often administered boiled in water, as an article of diet during sickness, and is one of the best demulcents in diseases of the bowels.

Gum. The vegetable gums obtained from the Egyptian acacia, the gum Arabic of the shops, and from the plum, cherry, and other fruit trees, are highly nutritious. Whole caravans passing through the deserts have subsisted upon gum alone, possessing at the same time sufficient vigor and strength. Gum is seldom, however, made use of as an aliment. Dissolved in water, it is largely used as a demulcent drink for patients laboring under irritation or inflammation of the stomach, and in all the febrile affections or diseases of the bowels, it is almost the only drink or diet that should be allowed.







Nº 36.

EUPHORBIA IPHIGEA.
(Americana Ipomoea)

SYNOPSIS OF THE

1880-1881 Season.

1880-1881

SYNOPSIS OF THE

1880-1881 Season.

1880-1881
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1880-1881

SYNOPSIS OF THE

1880-1881 Season.

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EUPHORBIA IPSACUCANBA.
(diversa (ipsacucanba))

EUPHORBIACEÆ.

The Spurge Family.

No. 36.

EUPHORBIA IPECACUANHÆ.

WILD IPECAC. *American Ipecacantha.*

Geog. Position. United States.

Quality. Sweetish, milky.

Power. Emetic, cathartic, stimulant.

Use. Dropsy, cures, toothache, &c.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER EUPHORBIACEÆ.

Linnean Classification.

CLASS XXI. *Monoecia.* ORDER *Monoecia.*

AUTHORITIES.—Lin. Sp. IV. 652. Willd. Sp. Pl. 981. Lindl. Flor. Med. 185. Bigelow, Med. Bot., III. 108. Barton, Lev. 142. Na. 375. Barton, Virg. Med. Bot., I. 211. Raf. Med. Flor., I. 181. Whistler, Med. Diet. 63. Lond. Disp. 540. U. S. Disp. 580. Ec. Disp. U. S. 172. Raven, Bot. 57, 243. Lond. Encyc. Pl. 406. Thunberg, Mar. Med. 780. Pereira, El. Mar. Med. 241. Griseb. Med. Bot. 562. Carven, Hist. Med. Bot., II. 22. Gray, Bot. M. U. S. 486. Benth. Fam. Pl. 471. Henry, Med. Herb. 55. Koss, Mat. Med. 93. Wood, Class-Book. 443.

GENUS EUPHORBIA.

This genus is the EXCESSIVE of Dioscorides, and it was so named after Euphorbus, physician to Iuba, king of Libya.

SYNONYMS.—*L'Eschulbe* (Fr.), *Das Euphorbium* (Ger.), *Euphorbium* (Dutch), *Euforbio* (It.), *Euforbio* (Sp.), *Euphorbio* (Port.).

THE ESSENTIAL CHARACTERS.

CALYX. Inferior, lobed, or wanting.

CORDOLA. *Petals* or *scales* equal in number to the *sepals*, or wanting.

STERILE FLOWERS. *Saments* definite or indefinite, distinct or monadelphous. *Stamens* two-celled.

FERTILE FLOWERS. *Ovary* free, of two—nine more or less united carpels, coherent to a central prolongation of the axis. *Styles* distinct, often two-cleft.

FRUIT. Capsule of three dehiscent carpels opening elastically.

SEEDS. With a large embryo in fleshy albumen.

THE SECONDARY CHARACTERS.

EUPHORBIA. *Flowers* Monocious, mostly achlamydeous. *Involute* monophyllous, subcampanulate, with four- five petaloid segments alternating with as many external, gland-like teeth. *Sterile flowers*, twelve or more. *Stamen*, one. *Filament* articulated in the middle. *Fertile flowers*, solitary, central. *Ovary* pedicellate. *Styles* three, bifid. *Capsule* three-lobed, three-celled. *Cells* one-seeded.

Involute perianth-like, inflated, with alternating petal-like segments. *Staminate fls.* twelve or more, at the base of the style of the pistillate flower, each consisting of an anther united to a pedicel by a filament. *Pistillate flower* central, single, stipit, with three two-cleft styles. *Capsule* three-lobed.

THE SPECIFIC CHARACTERS.

EUPHORBIA SPECUPLANDE. Proscumbent or suberect, small, smooth. *Leaves* opposite, obovate, and lanceolate. *Peduncles* elongated, axillary, one-flowered.

Proscumbent, small, glabrous. *Leaves* opposite, oboval or lanceolate. *Peduncles* axillary, elongated, one-flowered.

THE ARTIFICIAL CHARACTERS.

CLASS MONOCOL. *Stamens* apart from the pistils in different flowers upon the same plants. **ORDER MONANDREA.** **Monocious.** Calyx-like involucre inclosing several staminate (monandrous) flowers with one pistillate flower.

NATURAL HISTORY.

The very singular species **EUPHORBIA SPECUPLANDE** is exclusively a native of the United States. It is extremely amorphous, varying so much in the shape of its leaves, their color, and in fact in the whole appearance of the plant, that in its different states it might be taken, by those unacquainted with it, for several distinct species of the same genus. The root is perennial, large, from four to six feet long, and generally near an inch or an inch and a half in diameter. It is tuberculated and of a yellowish color, sending off towards its upper end numerous smaller roots, generally about the thickness of a crow or goose quill, and sometimes larger. The stems are numerous, dichotomous, white under the earth or sand, and red, pale green, or yellow above. The stipules are heart-shaped and small. The leaves are opposite, sessile, and are generally oval, sometimes obovate, occasionally lanceolate, and not unfrequently even linear. They are always en-

fire on their margins, but sometimes when obovate are emarginated or notched at the apex. While the plant is in flower in May the leaves are very small, when it grows older they become much increased in size. The flowers are situated in solitary and flowered peduncles, varying in length from less than an inch to three inches. The seeds are three in number, inclosed in a triangular-like capsule.

This plant is very generally confined to the great Atlantic alluvial region extending from New Jersey to Florida and Mexico, along the sea, and very common there in sands and pine woods. It blossoms from June to August, and affords a multitude of varieties. It delights in a loose, moist, sandy soil, and is often found growing in beds of sand only. As the root alone is used, it may be gathered for medical purposes at any time. It is equally efficacious whether dug in April or September. It might be exported and afforded cheap.

It is a singular coincidence, that the name given to the root of the several varieties of this genus by the Indians of Louisiana is *Pebeca*, so very similar to the Brazilian native name of *Ipeca*, and both meaning emetic root.

The plate represents an entire plant of the crimson variety, with a portion of the root. The specimen from which this figure was drawn (in May) had a root of the thickness of the lowest part five and a half feet long. Where the stems are red, they appeared above the sand.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

EUPHORBIA IPECACUANHE has been very particularly analyzed by several eminent chemists. It contains mucilage, sugar, starch, caoutchouc, resin, an essential oil, tannin and a peculiar principle similar to *Emetica*, which is soluble in alcohol and colors it yellow, but insoluble in water, forming oxalic acid with nitric acid, and might be called *Oxalemis*. The roots and leaves of the different varieties have a sweetish and not unpleasant taste, with a peculiar smell when rubbed, but no nauseous taste or smell. The milk is arid, and by friction between the fingers it is convertible into caoutchouc.

The properties of this plant are emetic, cathartic, diaphoretic, expectorant, astrigent, rubefacient, blistering, and stimulant. It is highly recommended by some physicians as equivalent to the official *ipecacuanha*, which some even think it ought to supersede; but others contend it is less mild and bland, and although equal, or even stronger, is not so useful in

all indications. It has been considered too violent in its operation, but it has since been found manageable and safe; the action is always proportionate to the quantity taken, which is not the case with the common ipecacuanha. As a cathartic, the plant has been found equal or better than jalap or scammony, requiring only half the dose; ten grains will commonly purge well, while twenty-five to thirty grains produce repeated evacuations from the stomach. Given in large doses they excite violent vomiting, attended with heat, vertigo, dizziness, and debility. A diversity, however, has been noticed in various constitutions, the same doses being sometimes inert, cathartic or emetic, or both; in some instances it often produces nausea even in small doses, and then acts as a diaphoretic, like ipecacuanha, to which it is preferable by having no unpleasant taste, nor exciting pains and spasms.

These peculiar properties reside in the thick bark of the root, which forms two thirds of the whole root, and produces one twelfth of watery extract and one tenth of alcoholic extract. It may be substituted for ipecacuanha in all the pharmaceutical preparations, wine, tincture, extract, &c. The emetic dose of the wine is an ounce; of the extract, three to five grains. When used as a diaphoretic and expectorant, the dose is three or four grains of the powder. It may be combined with opium or antimonials.

The root of the *EUPHORBIA IPECACUANHA*, bruised and applied to the skin, produces vesication in about twelve hours, which lasts two or three days; this property has not yet, however, been applied to practical purposes, but it is probably equivalent to that of the official *Euphorbia* used by farmers.

This plant has been given as a hydragogue in dropsies, but owing to its effects, its internal use is now rejected. Neither as an emetic can it be used alone, for it sometimes occasions so much inflammation as to produce hæmorrhage from the nostrils and swell the integuments of the head. When properly diluted, however, with starch or any other inert powder, and cautiously used, it is an effectual and excellent emetic in lethargy, deafness, palsy, amaurosis, and similar cases.

The milk of all the species of this genus is good to destroy warts and cure herpes; it also affords a kind of black varnish or gum-elastic.

In combination with sulphate of potassa and opium the root of this plant furnishes a Dover's powder which is in no way inferior to the *Patria ipecacuanha composita*. Indeed, it has the advantage over the foreign article, that its taste and odor are not unpleasant. Considering how often the imported ipecacuanha is adulterated, it will be found of the utmost importance to pay more particular attention to this native article, which may become even an advantageous substitute, and is a real addition to our list of valuable emetics.



Nº 37

Solanum elaeagnifolium

Bitterwort. Woolly Nightshade.

THE
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Prunella vulgaris
Common Blackberry
Linnæus, *Sp. Pl.* 1003. t. 12. f. 1.

SOLANACEÆ.

The Nightshade Family.

No. 37.

SOLANUM DULCAMARA.

BITTERSWEET. *Woody Nightshade.*

Geog. Position. Europe, America.

Quality. Nauseous, somewhat sweet.

Power. Anodyne, repelling, diuretic.

Use. Contusions, rheumatism, pleurisy, asthma, &c.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER SOLANACEÆ.

Linnean Classification.

CLASS V. Pentandria. ORDER Monogamia.

Authorities. Lin Sp. Pl. 264. Willd. Sp. Pl. 6218. Woods, Med. Bot. 935. Danks, Flor. N. A. 138. Lindl. Flor. Med. 511. Bigelow, Med. Bot. 1. 169. Barton, Lec. 272. No. 503. Ed. Med. Flor. II. 88. Whistler, Med. Disc. 34. Lond. Disp. 502. U. S. Disp. 511. Ec. Disp. U. S. 482. Eamon, Bot. 41, 402. Lond. Encyc. Pl. 158. Ballard and Garrod, Mat. Med. 345. Thomas, Mat. Med. 1872. Pennin, El. Mar. Med. II. 332. Gulf. Med. Bot. 480. Gray, Bot. N. U. S. 355. Boeck, Fam. Pl. 472. Howard, Bot. Med. 331. Hervey, Med. Herb. 44. Kost, Mat. Med. 371. Wood, Class-Book, 448.

GENUS SOLANUM.

Etymology uncertain. Some derive it from Lat. *sol*, the sun, and Greek *lano*, without having reference to the Nightshade species. Others from *solari*, to roast, though the application is not evident.

Synonymes. — Morilla (Fr.), Der schwarze Nachtschatten (Ger.), Zweite Nachtschade (Dutch), Solanum (It.), Hierba Mala (Sp.), Herba Mala (Port.), Enalabbi (Arab).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four—five, more or less united, mostly persistent.

COROLLA. *Regular.* *Limb* four—five cleft, plaited in aestivation, deciduous.

STAMENS. *Four—five* (sometimes one abortive), inserted on the corolla alternate with its segments. *Antheas* bursting longitudinally, rarely by terminal pores.

OVARY. *Free* (superior), two-celled (four-celled in *Datura*), with the placenta in the axis. *Style* and *stigma* united into one.

FRUIT. A capsule or berry.

SEEDS. Numerous. *Embryo* curved, lying in fleshy albumen.

THE SECONDARY CHARACTERS.

SOLANUM. Calyx five-ten parted, persistent. Corolla rotate, sub-campanulate. Tube very short. Limb plicate, five-ten-lobed. Anthers erect, slightly cohering or connivent, opening by two pores at the top. Berry two-six-celled, sub-globose or depressed, often torose. Seeds numerous.

Calyx five-ten parted, permanent. Corolla bell or wheel form, five-lobed, plaited. Anthers thickened, partly united, with two pores at the top. Berry containing many seeds, two-six-celled.

THE SPECIFIC CHARACTERS.

SOLANUM DELCAMAHA. Stem shrubby, flexuous, thornless. Leaves ovate-cordate, upper ones hastate. Clusters cymose.

Stem woody, round, climbing. Lower leaves mostly cordate, glaucous. Upper leaves mostly ovate-hastate, few-flowered. Corolla opposite to leaves.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. SHOWERS five. ORDER MONOCOSMIA. Monopetalous. Flowers inferior. Corolla regular. Herbs rarely shrubby. Stamens alternate with petals. Fruit a capsule or berry. Cells two, many seeds. *Estivation* plicate.

NATURAL HISTORY.

The **SOLANUM DELCAMAHA** is a true Solanum, and a well-known shrubby plant, native of Europe and naturalized in the United States, growing in the Eastern and Northern States from New England to Ohio in shady, fertile grounds, especially in watery situations, and flowering from June to August.

The root is ligneous, the stem woody, roundish, twining, branched, and climbing (when supported) to the height of six or eight feet; the leaves are alternate, on footstalks, smooth, soft, about two inches long and one broad, and of a dull green color, the lowermost cordate and undivided, and the uppermost halberd-shaped; they are all entire at the margin. The flowers are in elegant clusters opposite to the leaves, or terminal, drooping, spreading, smooth, alternately subdivided, and having the semblance, but not the structure, of a true cyme; each consisting of a small, purplish calyx with blunt segments, a corolla of five reflected, equally divided, pointed, bright violet-colored segments, with two round green dots at

the base, and a longitudinal deeper purple vein through the centre of each segment, and large, erect, almost sessile lemon-yellow anthers; the berries, which ripen in September and October, are oval, scarlet, very juicy, bitter, and esteemed poisonous. They continue to hang in beautiful branches after the leaves have fallen.

The annual stems or extreme twigs are the parts most commonly employed, and should be collected in the autumn, after the leaves have fallen, as at that season they are more powerful, depending, perhaps, on their being less succulent, and containing more of the peculiar secretion on which the virtues of the plant depend. The soil in which the plant grows also affects its medicinal powers; a high and dry situation being the most proper for this purpose.

There is a point of agreement among the plants brought together in Natural Orders which is of the greatest practical importance. This is, that those plants which agree in structure almost invariably correspond in properties also. Thus, when a plant is recognized as a member of a particular Natural Order, an almost certain account may be given of its properties, — whether it is likely to be injurious or wholesome, to furnish valuable medicines or important articles of food. It must be remembered, however, that the peculiar properties of the plant do not pervade every portion of it, and that it may hence be possible to obtain wholesome nutriment even from members of orders most distinguished for their deleterious properties. The plant under consideration, for instance, belongs to the same family as the common potato (*Solanum tuberosa*), and is one instance among a few others that have been noticed of plants of the same order greatly differing in their medicinal properties.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The *SOLANUM DULCAMAHA* contains an alkaloid substance originally discovered by M. Derfosses, of Besançon, in the berries of the *Solanum nigrum*, and has been subsequently found in the stalks, leaves, and berries of the plant under consideration. This substance he called *Solanin*. It is in the form of a white opaque powder, inodorous and slightly bitter, fusible at a little above 212°, scarcely soluble in water, soluble in alcohol and ether, and capable of neutralizing the acids. It is prepared by precipitating the juice of the berries by ammonia, drying this precipitate, and treating it with

boiling alcohol. The alkali is deposited as the spirit cools. Besides Solania, the twigs of the SOLANUM DULCAMARA contain also a peculiar principle, to which Pfaff gave the name of Pteroglycine, indicative of the taste they possess. This may be obtained in a crystalline state by the following process. The watery extract is treated with alcohol, the tincture evaporated, the residue dissolved in water, the solution precipitated with subacetate of lead, the excess of this salt decomposed by sulphuretted hydrogen, the liquor then evaporated to dryness, and the residue treated with acetic ether, which yields the principle in the form of small isolated crystals by spontaneous evaporation. In the plant are also found a vegetable-animal substance, gummy extractive, gluten, wax, resin, benzoïn, acid starch, lignine, and various salts of lime.

The whole plant is used as an alterative, anodyne, diuretic, narcotic, repellent, &c. The taste is slightly bitter, followed by a sweetness (whence the name) not unlike that of liquorice-root, depending probably on an uncrystallizable sugar, with a slight degree of acrimony. The article is very strongly recommended by many very respectable practitioners, and pronounced adequate to produce nearly all the good effects of sulphur, antimony, and mercury, in chronic rheumatism, humoral asthma, dropsy, and in lepra vulgaris and alba, scabies, psoriasis, and all cutaneous affections. It has also been used in pleurisy, peripneumonia, dysdyschia, alacorthea, and scrofula. Dr. Willan, in his description and treatment of cutaneous diseases, remarks, that "Bitter-sweet is not applicable for the cure of lepra nigricans," nor is it of the least use in acute rheumatism, and, notwithstanding some have strongly recommended it in fluxus albus and suppression of the menses, it has proved of little advantage.

When given in too large doses at first, SOLANUM DULCAMARA occasions nausea, vomiting, syncope, violent palpitation and convulsive twitchings in the eyelids, lips, and hands. It therefore requires to be begun with small doses, which ought to be always moderate and gradually increased, beginning with one ounce of the decoction of five grains of the extract three times daily; but when most cautiously administered, if the above symptoms occur, the dose must be lessened, and some aromatic conjoined.

The usual form under which BITTERSWEET is used is that of watery infusion or decoction; of which two ounces may be taken four times a day, and gradually increased till some slight disorder of the head indicates the activity of the medicine. It may also be given in substance pulverized. The dose of the powder may be from twenty grains to one drachm, taken in a cupful of milk. In cutaneous affections, a strong decoction is often applied with good effect to the skin, at the same time that the medicine is taken internally.



Nº 38.

ULMUS FRAXO.

Slippery elm. Red elm.





ULMACEÆ.

The Elm Family.

No. 38.

ULMUS FULVA.

SLEEPY ELM. *Red Elm.*

Geog. Position. North America.

Quality. Mucilaginous.

Power. Demulcent, tonic.

Use. Diarrhea, dysentery, &c., inflammation.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER ULMACEÆ.

Linnean Classification.

CLASS V. *Peucedanis.* ORDER DIGNIT.

Authorities.—Lin. Sp. Pl. 327. Willd. Sp. Pl. 1324. Pursh. Floe. N. A. 206. Dial. Floe. Med. 202. Banton, Eccl. 396, No. 541. Raf. Med. Floe., II. 371. Whittier, Med. Disc. 43. Lond. Disp. 544. U. S. Disp. 742. Ec. Disp. U. S. 407. Eaton, Bot. 56. 454. Lond. Encyc. Pl. 208. Radcliff and Garrod, Mat. Med. 292. Twiss, El. Mat. Med. II. 294. Goss. Med. Bot. 365. Gray, Bot. N. U. S. 393. Reich, Fam. Pl. 675. Brown, Bot. Med. 258. Emery, Med. Book 119. Kart, Mat. Med. 562. Wood, Class-Book, 482.

GENUS ULMUS.

From Elm, its original name in Anglo-Saxon. Teutonic, Gothic, and other Celtic dialects, having remained unchanged in English.

Synonyms.—L'Ulme (Fr.), Die Ulme (Ger.), Ulm (Danish), Olmo (It., Sp., Port.), Kavayitch (Turk.), Elm (Russ.), Elm (Pol.), Moriske Sale (Russ.).

THE ESSENTIAL CHARACTERS.

CALYX. Free from the ovary, campanulate, four- or five-lobed, imbricate in aestivation.

COROLLA. Wanting.

STAMENS. Inserted in the base of the calyx, as many as its lobes, and opposite to them.

OVARY. One- or two-celled. Oviduc solitary. Stigmas two, distinct.

FRUIT. Indehiscent, either a samara or drupe, one-celled, one-seeded.

SEED. Pendulous, without albumen. Cotyledons foliaceous.

ULMUS FULVA.

THE SECONDARY CHARACTERS.

ULMUS. *Flowers* perfect. *Calyx* campanulate, four-
-cleft. *Stamens* five-eight. *Styles* two. *Samaras* compressed,
with a broad, membranaceous border.

Calyx bell-shaped, widening. *Doctrs* four-five-cleft. *Seed* oval, enclosed in a flat
membranaceous samara. *Samaras* vary from four to eight.

THE SPECIFIC CHARACTERS.

ULMUS FULVA. *Branches* rough. *Leaves* oblong-ovate, ac-
-minate, nearly equal at base, unequally serrate, pubescent both
sides, very rough. *Bark* covered with fulvous down. *Flowers*
sessile.

Branches without, whitish. *Leaves* ovate-oblong, acuminate, nearly equal at
the base, unequally serrate, pubescent both sides, very scabrous. *Bark* tomentose,
with very dense yellowish wool. *Flowers* sessile.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. **ORDER DIOYNIA.** *Apet-*
-alous. *Trees.* *Fruit* a samara.

NATURAL HISTORY.

The **ULMUS** is a genus of hardy trees, most of them valued for their timber. It is indigenous, and grows very abundantly in woods and low grounds, flowering in March or early in April, before the leaves are unfolded. It may be found in all parts of the United States north of Carolina, but is especially abundant west of the Alleghany Mountains. It grows to a considerable height, from twenty to forty feet, and its diameter is from one to two feet. The branches are strong, spreading, and lateral, with the bark of the trunk very rough and cracked, but that of the younger branches smooth and tough. The leaves are rough on both sides, villose beneath along the veins, doubly serrate, longer on one side of the midrib than on the other, about three inches long, two broad, and of a dark green color. The leaves of the **ULMUS FULVA**, Slippery Elm, are larger, thicker, and rougher than those of the **ULMUS AMERICANA**, White Elm, and exhale a pleasant odor. The flowers, which appear before the leaves, are in distinct gems, clustered at the extremity of the young shoots, scarcely peduncled, numerous, small, of a red color, and have a violet odor, and are succeeded by membranaceous seed-vessels of a compressed and oval shape, containing one oval seed.

The wood is used in all works where it may be continually dry or wet; as for water-pipes, pumps, water-wheels, &c. It is also very generally used for weather-boarding, and for common cabinet-work. The knotty parts, like those of the ash, are used for maves and hubs. The whole makes good fuel and charcoal.

The narrow-leaved elm requires a light, dry soil, and warm situation, and will not do well in sand or gravel in exposed places; but the smooth-barked elm is a very hardy tree, and will grow in thin, clayey soil on retentive substrata better than most others. It will also thrive in situations elevated and exposed on all sides.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The bark of the *Ulmus fulva* is an article of much importance in the practice of medicine, and particularly in medical surgery. It is in long, nearly flat pieces, from one to two lines in thickness, of a fibrous texture, a tawny color, which is reddish on the inner surface, a peculiar sweetish, not unpleasant odor, and a highly mucilaginous taste when chewed. By grinding, it is reduced to a light grayish fawn-colored powder. It abounds in mucilaginous matter, which it readily imparts to water. The inner bark is used, and is brought to the shops separated from the epidermis. That of the young branches is of a whitish-yellow, fulvous, rather brittle and extremely mucilaginous, and devoid of any sensible astringency; that of the old branches is thicker, of a darker color, slightly mucilaginous, and astringent. It contains fecula, ulmine, and gum; is edible and mild, yet very efficient demulcent, diuretic, pectoral, deobstruent, emollient, &c. It is inodorous, and has a slightly bitter, slimy taste.

The decoction or infusion of this bark has been very usefully employed as a demulcent in affections of the urinary passages, and in some diseases of the alimentary canal. In dysentery, diarrhea, and cholera infantum, it has proved a very efficient medicine, and is successfully prescribed in these instances.

The internal use of the decoction of this bark has been found very efficacious in lepra vulgaris and in other varieties of cutaneous diseases; but it is seldom found to show its good effects in these complaints before its use has been continued for several months. The more distress it produces, the more certain is its beneficial operation.

This bark pulverized has lately been very extensively used, boiled with water or milk in the form of pap, as a light nourishment for children affected with diarrhea, dysentery, &c.

One drachm of the powder boiled with water or milk, and sweetened with sugar, forms a common bowlful of this pap.

When boiled in a small quantity of water, it forms a thick, dark-brown colored decoction, which gelatinizes as it cools; and when evaporated, leaves a brittle, semi-transparent substance, soluble in water, but insoluble in alcohol and ether, to which, however, it imparts a brownish color. The brittle residue, when treated in the same manner as Klapproth treated the gum-like exudation from the *Ulmus nigra*, afforded nearly the same results, and consequently it must be regarded as *ulmin*; but from the effects of some reagents, it is considered a peculiar modification of potassa, which Scheele detected in elm-bark. Ulmin is the substance which exudes spontaneously from the tree; it is also found in the Oak, Chestnut, and other trees, and, according to Berzelius, is a constituent of most kinds of bark.

As an external application in the form of poultice, it is an admirable remedy, far exceeding any other known production, for ulcers, tumors, swellings, gunshot wounds, chilblains, burns, cutaneous diseases, erysipelas, felons, old, obstinate ulcers, and scabs. It is also used very advantageously as a wash for sore mouth or thrush.

It quickly and powerfully allays inflammation, promotes resolution, also suppuration, and heals speedily.

The tea has long been known among Indian women as a specific to insure easy parturition. They drink it for about two months previously, and it is now in very general use.

The surgeons of the Revolutionary army of 1776, and also those of General Wayne's army, which defeated the Indians in August, 1794, used this bark as an external application to gunshot wounds. Poultices made of the flour of the bark were applied to the wounds, which were soon brought to suppuration and to a disposition to heal. When tendency to mortification was evident, this bark, bruised and boiled in water, produced the most surprising good effects. On those occasions, also, the soldiers used it as nutriment, and it is stated that a soldier who lost his way supported himself for ten days upon this mangle and that of sassafras. The Indians, it is said, resorted to it for nutriment in extreme emergencies. When eaten alone, however, it produces sour stomach and eructations. In fact, slippery elm is one of the most valuable articles in the *Materia Medica*. It is used to moisten the parched mouth, to correct irritation of the throat, lungs, stomach, and bowels, to lubricate all parts, to nourish weak stomachs, to relieve thirst, to give constant moisture and softness to a cataplasm, to roll up pills in, to aid in the action of enemata, &c., and, with charcoal and gum myrrh, to prevent mortification. Taken in large quantities, it has been known to expel worms by merely sliding them out of the body.







8139

SAMBUCUS RACEMOSA

Common Elder

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY
5408 S. UNIVERSITY AVE.
CHICAGO, ILL. 60637

RECEIVED: 10/10/68

FROM: J. H. DUNN
TO: J. H. DUNN

RE: 10/10/68

1. The following information was received from the Chicago Police Department on 10/10/68:

On 10/10/68, the Chicago Police Department received a report from a confidential source that a person known as [redacted] was in the Chicago area.

2. The Chicago Police Department is currently conducting an investigation of the activities of [redacted] and is seeking information regarding the whereabouts of this individual.

3. The Chicago Police Department is currently conducting an investigation of the activities of [redacted] and is seeking information regarding the whereabouts of this individual.

4. The Chicago Police Department is currently conducting an investigation of the activities of [redacted] and is seeking information regarding the whereabouts of this individual.

5. The Chicago Police Department is currently conducting an investigation of the activities of [redacted] and is seeking information regarding the whereabouts of this individual.



CORONILLA PLENIOR.

CAPRIFOLIACEÆ.

The Honeysuckle Family.

No. 39.

SAMBUCUS CANADENSIS.

COMMON ELDER.

Geog. Position. Northern temperate zones.

Quality. Nauseous.

Power. Sudorific, hepatic.

Use. Erysipelas, fevers, rheumatism, and eruptions.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER CAPRIFOLIA.

*Linnean Classification.*CLASS V. *Pentandria.* ORDER Trigynia.

AUTHORITIES.—*LIN.* Sp. Pl. 793. *WILLD.* Sp. Pl. 1494. *WOODY.* Med. Bot. 596. *PARK.* Flac. N. A. 285. *LINDL.* Flac. Med. 466. *HARTM.* Lec. 262. No. 475. *RAF.* Med. Flac. II. 760. *WILLDOW.* Med. Bot. 37. *LEND.* Disp. 525. *U. S.* Disp. 643. *ED.* Disp. U. S. 251. *EASON.* Bot. 59, 419. *LEND.* Encey. Pl. 228. *HALLAND and GARROD.* Mat. Med. 290. *PERVIN.* El. Mat. Med. II. 473. *GRIF.* Med. Bot. 251. *GRAY.* Bot. N. U. S. 175. *SMITH.* Flac. PA. 677. *HOWARD.* Bot. Med. 298. *HENRY.* Med. Bot. 602. *KENT.* Mat. Med. 290. *WOOD.* Class-Book, 201.

GENUS SAMBUCUS.

From the Lat. *Sambucus*, Greek Σαμβούκος, Heb. *Sambuca*, a musical instrument supposed to have been made of the hollow stem of the Elder, on account of its hardness.

SYNONYMS.—*LE SUEUR.* (Fr.) *Der Hohlender* (Ger.), *Vlierboom* (Dutch), *Sambuco* (It.), *Sambo* (Sp.), *Tobayin* (Chin.), *Basma* (Hind.), *Bre* (Pol.)

THE ESSENTIAL CHARACTERS.

CALYX. Adherent to the ovary (superior), the limb five- (rarely four-) cleft or toothed.

COROLLA. Tubular or rotate, regular or irregular.

STAMENS. As many, or one less than as many, as the lobes of the corolla, alternate with them and inserted on the tube.

OVARY. Three- (rarely four or five-) celled. *Style* one. *Stigmas* one-four.

FRUIT. Baccate, fleshy or dry, crowned with the persistent calyx-lobes.

SEEDS. Pendulous.

THE SECONDARY CHARACTERS.

SAMBUCUS. Calyx small, five-parted. Corolla five-cleft. Segments obtuse. Stamens five. Stigmas obtuse, small, sessile. Berry globose, pulpy, three-seeded.

Calyx five-parted or five-lobed, small. Corolla sub-rotundate or sub-ovate, five-cleft. Stigmas minute, sessile. Berry globose, one-celled, three-seeded.

THE SPECIFIC CHARACTERS.

SAMBUCUS CANADENSIS. Stem shrubby. Cymes five-parted. Leaves nearly bipinnate: Leaflets oblong-oval, acuminate, smooth.

Branchlets and petioles glabrous. Leaflets about 12, four pairs, oblong-oval, glabrous, shining, acuminate. Cyme lax, divided into about five parts.

THE ARTIFICIAL CHARACTERS.

CLASS PENTAGNIA. Stamens five. Ovary TRIGYNIA. Flowers superior. Corolla rotate or urn-shaped. Shrubs with opposite leaves.

NATURAL HISTORY.

THE *SAMBUCUS CANADENSIS* is a common, well-known shrub, indigenous in the United States, from six to ten feet high, with a branching stem which is covered with a rough, gray bark, and contains a large, spongy, light, and porous pith, especially when young. The small branches and the leaf-stalks are very smooth. The leaves are opposite, pinnate, sometimes bipinnate, and composed usually of three or four pairs, with an odd one of oblong-oval, acuminate, smooth, shining, deep-green leaflets, the midribs of which are somewhat pubescent. The flowers are small and numerous, white, and disposed in very large, loose, level-topped cymes, having about five divisions, with a heavy odor. The berries are small, globose, and when ripe of a deep dark-purple color.

The shrub grows in thickets and low, waste, moist grounds, along fences, and on the borders of small streams, in all parts of this continent from Canada to Carolina. It flowers from May to July, and ripens its berries early in the autumn. The whole plant has a narcotic smell, and it is not prudent to sleep under its shade.

Professor Martyn observes, the shrub is a whole magazine of physic to the rustic and country practitioner. The fruit is in demand in many places, but especially in London and the

principal English towns, for making elder wine of the expressed juice; a powerful, warming, and enlivening article for family use. The berries ripen in perfection, for the purpose of making this wine, about the middle and end of September and in October, and should then be gathered in bunches.

The wood is used by the turner and mathematical instrument maker, and is made into tops, angling-rods, and needles for weaving nets. It is exceedingly tough and hard, and was always famous for these qualities, so that Pliny says it consists of nothing but skin and bones. (B. XXI. c. 39.)

The common Elder will grow almost anywhere, either in open or shady situations; it may be planted in any out-ground or waste spot, in single standards, or in rows to assist in forming boundary fences. Those planted in the hedge cedar, if untrimmed, will produce abundance of berries for use.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The flowers of the *Sambucus* are the officinal portion; they have a peculiar faint, sickly, and sweetish odor, which is strong in their recent state, but becomes feeble by drying. Their taste is bitterish. These properties are imparted to water by infusion and also by distillation, during which a small portion of volatile oil is separated, which on cooling assumes a butyrous consistence. Water distilled from them contains an appreciable portion of ammonia. The berries are nearly inodorous. They have a sweetish, acidulous taste, dependent on the saccharine matter and malic acid which they contain. They yield, on expression, a fine purple juice, which forms a vinous liquor, very highly esteemed in the North of Europe. It is colored violet by alkalis, and bright red by acids; and the coloring matter is precipitated blue by acetate of lead. M. A. Chevalier has ascertained that paper stained with this juice is as delicate a test of the presence of alkalis and acids as litmus-paper. The inner bark is inodorous, and has a faint sweetish taste, which is succeeded by a slight bitterness and a very permanent acrimony. Both water and alcohol extract their virtues, which are said to reside especially in the green layer between the liber and epidermis. According to Simon, the active principle of the inner bark of the root is a soft resin, which may be obtained by exhausting the powdered bark with alcohol, filtering the tincture, evaporating to the consistence of sirap, then adding ether, which dissolves the active matter, and finally evaporating to the consistence of a thick extract. Of this, twenty grains produced brisk vomiting and purging.

The flowers and berries are diaphoretic and aperient. The

flowers are used in fomentations and cooling ointments, and to afford their odor to water in distillation. A tea made of the flowers yields a mild anodyne purgative, and is recommended to remove the hepatic affections of children, and to obviate costiveness. They are also said to be excellent to purify the blood.

The expressed juice of the berries, dried to the consistence of a rob (to the consistence of honey by evaporation, before it has fermented), proves a useful aperient medicine. It opens obstructions of the viscera, promotes the natural evacuations, and, if continued a length of time, does considerable service in various chronic disorders. An ounce of the juice of the berries purges. This juice inspissated was formerly much used, and enjoyed some reputation as a remedy in febrile diseases, rheumatism, gout, eruptive, and syphilitic diseases.

The inner green bark is a hydragogue cathartic, acting also as an emetic in large doses. It is said to prove efficacious in dropsy, and in small doses to be a useful aperient and deobstruent in various chronic affections. An infusion of this bark in wine, in the dose of half an ounce or more, is said to purge moderately, and in smaller doses to prove an efficacious deobstruent, capable of promoting all the fluid secretions.

The young leaf-buds are strongly purgative, and are violent and unsafe.

Elder wine, so highly esteemed and valued in Europe, is made by mixing twelve and a half gallons of ripe elder-berry juice and forty-two pounds of sugar with thirty seven and a half gallons of water, that previously has had boiling in it six ounces of ginger and nine ounces of pimento, bruised and strained off; and when rather less than milk-warm, almost cold, add one pint of good yeast, and let it ferment fourteen days in the barrel, bung it close, and bottle it in six months.

The liquid sold in the stores as Green Oil, or Oil of Elder, is prepared by boiling the leaves of the Elder in rape oil. It is employed as a liniment. By distillation the flowers of the Elder yield a small quantity of butyraceous, odoriferous oil, but totally unfit for any useful purpose whatever.

Elder-flower water is frequently made from the pickled flowers (*flor. Sambuci saliti*), which are prepared with alternate layers of the flowers and common salt, compressed and preserved in a well-closed vessel, the water which exudes being rejected. It is principally used as a perfume.

Elder ointment is simply emollient, and possesses no advantages over simple ointment. It is a vestige of the redundant practice of former times. The formula is as follows:—Take of fresh elder-flowers three pounds, prepared hog's lard four pounds, mutton suet two pounds. Boil the leaves in the lard until they are crisp, then strain by expression. Finally mix and add the suet.



Nº 40.
MALVA SYLVESTRIS.
Rose Mallow



MALVACEÆ.
The Mallow Family.

No. 40.

MALVA SYLVESTRIS.

HIGH MALLOW.

Geog. Position. England.

Quality. Mucilaginous.

Power. Demulcent, astringent.

Use. Stranguary, inflammations, pains.

BOTANICAL ANALYSIS.

Natural Classification.

Order MALVACEÆ.

Linnean Classification.

Class XVI. *Monadelphia.* Order *Polyandria.*

Authorities. — *Lia.* Sp. Pl. 338. *Wilm.* Sp. Pl. 787. *Woods.* Med. Bot. 553. *Parr.* Flor. N. A. 434. *Link.* Flor. Med. 149. *Burm.* Lec. 265. No. 368. *Raf.* Med. Flor. II. 246. *Whitl.* Med. Bot. 134. *Loefl.* Disp. 425. *U. S.* Disp. 410. *Er. Disp.* U. S. 236. *Emm.* Bot. 75. 312. *Loefl.* Encey. Pl. 582. *Ballard.* and *Guss.* Mat. Med. 212. *Thomson.* Mat. Med. 3183. *Perria.* El. Mat. Med. II. 665. *Griff.* Med. Bot. 351. *Gray.* Bot. N. U. S. 65. *Wood.* Class-Book, 206.

GENUS MALVA.

Altered by the Latins from the Greek word *malakos*, soft, in allusion to the soft mucilaginous qualities of the species.

Synonyms. — *La Malva* (Fr.), *Die Malve* (Ger.), *Malwe* (Dutch), *Malva* (It.), *Malva* (Sp.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals generally five, more or less united at base, valvate in aestivation.

Corolla. Petals equal in number to the sepals, hypogynous.

STAMENS. Indefinite, monadelphous. Anthers one-celled, bursting transversely.

OVARY. Of several carpels arranged in one or more rows around a common axis. Styles as many as the carpels, either united or distinct.

FRUIT. Capsular or baccate. Carpels one or more seeded, united or distinct.

SEEDS. Sometimes hairy. Embryo curved.

THE SECONDARY CHARACTERS.

MALVA. *Calyx* five-cleft, the involucel mostly three-leaved. *Carpels* numerous, one-celled, one-seeded, indurulent, arranged circularly.

Calyx double, outer one three-lobed, inner one five-cleft. *Carpels* many, arranged circularly, one-celled, one-seeded.

THE SPECIFIC CHARACTERS.

MALVA SYLVESTRIS. *Stem* erect. *Leaves* five - seven-lobed, rather acute. *Peduncles* and *petioles* hairy.

Stem erect. *Leaves* short seven-lobed, scabrous. *Peduncles* and *petioles* hairy.

THE ARTIFICIAL CHARACTERS.

CLASS MONADELPHIA. *Stamens* united by their filaments into one set. **ORDER POLYANDRIA.** *Calyx* valvate in maturation, generally double. *Herbs*.

NATURAL HISTORY.

The **MALVACEÆ**, or **Mallow Tribe**, is a somewhat important class of plants forming about one fiftieth of all the flowering plants of tropical valleys. But few are natives of the temperate, and none of the frigid zone. In the Northern States they are all herbs.

The **MALVA SYLVESTRIS**, the common or High Mallow, of which we have given a plate, is a perennial, indigenous plant, common and popular everywhere, and of the easiest culture, often springing up spontaneously, growing on waste grounds and at the sides of roads where it is not cropped by cattle, and flowering from June till October. The root is fusiform, branching, and of a whitish color. The stem frequently erect, near three feet high, branched, round, hairy, and many-flowered. The hairs frequently spring in stellate clusters. The leaves are alternate, petiolate, cordate, divided into seven lobes, plaited, somewhat rough and crenate; the upper ones are almost palmate. At the base of each footstalk are two small, scale-like stipules. The flowers, which stand in slender, hairy peduncles, are large, composed of five inversely cordate, purple-reddish petals, with veins of a darker hue, three times longer than the calyx, which is hispid. The capsules are from ten to fifteen in number, of a roundish kidney-form, crustaceous, brittle, close all round, of a dark straw-color, excavated, and wrinkled in the back. The seeds are kidney-shaped, ash-colored, and furnished with an arillus which opens inwardly.

A tree of the Mallow kind is said by Prosper Alpinus to afford food to the Egyptians, and the Chinese use some sort of Mallow as food. MALVA was reckoned an excellent vegetable among the Romans, but what species is uncertain, and probably not the *Malva sylvestris*, as we learn from Horace,

"No paucis Oken,
Me Calceas, leuque Malva;"—*Lib. 1. Ode xxx.*

Almost every child is familiar with the cheeses that he finds among the commonest plants in the country, and there is not a civilized human being who does not make great use of cotton fabrics, yet few, save professed botanists, are aware how close a relation there is between the humble, neglected plant that bears the former, and the cherished exotic shrub to which we are indebted for the latter. They both, however, belong to this order, MALVACEÆ, which is marked by characters that readily distinguish it; and which may be explained from the common Mallow, as well as from any other of the more highly prized species.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

From the result of the chemical analysis of *Atheca officinalis* (the constituents of MALVA SYLVESTRIS being probably similar), it appears to contain fatty oil, glutinous matter, uncrystallizable sugar and albumen, mucilage, starch, phosphate of lime, vegetable medulla, and woody fibre. The substance which has been called *Atheca* is identical with Asparagin. It is crystallizable, odorless, and almost tasteless. It is soluble in water and alcohol, but it is insoluble in absolute alcohol and in ether. Acted on by the watery solutions of the alkalies, it evolves ammonia, and is converted into aspartic acid; hence it is called *Asparagine*, as it is an aspartate of ammonia. It has no influence on the therapeutic properties of the root.

The herb and flowers of the common Mallow are the official parts. They are inodorous, and have a weak, herbaceous, slimy, and mucilaginous taste. They abound in mucilage, which they readily impart to water, and the solution is precipitated by acetate of lead, and is little more than a simple solution of vegetable mucus. The infusion and tincture of the flowers are blue, and serve as a test of acids and alkalies, being reddened by the former and rendered green by the latter. The roots and seeds are also mucilaginous.

Common Mallow is emollient and demulcent. The herb, however, is more so than the root. The infusion and decoction are sometimes employed in dysentery, ischuria, stranguary,

and nephritic complaints; they are applicable to all other cases which call for the use of mucilaginous liquids. They are also used as an emollient injection, and the fresh plant forms a good suppurative or relaxing cataplasm in external inflammations. They are also used in the form of enema in tenesmus and nephritic colic, and in that of cataplasms and fomentations in phlegmonous inflammation.

In humid asthma, hoarseness, and likewise in affections of the kidneys and gravelly complaints, this plant is of eminent service, as, by lubricating and relaxing the vessels, it procures a more easy passage to the stagnant fluids. The plant is also used with equal advantage externally for softening and maturing hard tumors, and also affords relief in difficult teething.

The mucilage obtained from every part of this plant, the root, the herb, and the flowers, is capable, by being boiled in water or milk, of thickening them to the consistency of a syrup. This syrup is of a quality well calculated to defend the internal parts against the irritating effects of acriminous humors. Consumptive patients have derived very considerable advantage from its use, and it has been thought to have performed cures in some instances. The roots are to be boiled in milk (and asses' milk is most particularly recommended), and this should be the principal food and nutriment of the patient.

Medicines of mucilaginous character are particularly suited to prevent the action of acid and stimulating matters upon the mucous membrane of the throat, lungs, stomach, or bowels, or even upon the skin, when either is the seat of disease; and that not by correcting or changing the properties of the substances coming in contact with these parts, but by enveloping them in a mild and viscid matter, which prevents their action upon the morbidly irritable surfaces; or, as is most generally the case, by covering and shielding the latter. This description of medicines acts directly on the parts with which they come in contact; the top of the larynx being soothed by them first, and indirectly the inflamed portion of the passages. As they possess no active powers, they may be taken in such quantities as the stomach will bear.

Mallow roots contain a considerable quantity of mucus, which is extracted unaltered by water. The simple decoction of the roots is viscid, of a pale yellow color, sweetish, and has a peculiar odor resembling that of boiled turnips. The formula is as follows:—Mallow roots, dried and bruised, four ounces; raisins, stoned, two ounces; water, seven pounds. Boil down to five pounds, set aside the strained liquor until the dregs have subsided, and then decant it. This decoction is a useful demulcent. In the above preparation the raisins increase its sweetness and render it more palatable.



Nº 41
PHYLLOCLADUS
Dicomphor.

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FRUIT STYLUS

Eleocharis

COMPOSITE.

The Composite Family.

No. 41.

INULA HELENIUM.

BROADLEAF. *Common Elecampane.*

Geog. Distribution. South of Europe.

Quality. Aromatic, mucilaginous.

Power. Tonic, expectorant.

Use. Dyspepsia, pulmonary affections.

BOTANICAL ANALYSIS.

Natural Classification.

Order COMPOSITE.

Linnean Classification.

Class XVII. Sympetris. Order Polygamia.

AUTHORITIES.—Lin. Sp. Pl. 1256. Willd. Sp. Pl. 2086. Woodr. Med. Bot. 169. Presb. Flor. N. A. 552. Lindl. Flor. Med. 454. Batsch, Loe. 187. No. 327. Raf. Med. Flor., II. 272. Whittar, Med. Essar 124. Lond. Disp. 288. U. S. Disp. 432. Ec. Disp. U. S. 131. Eikon. Bot. 11. 285. Lond. Encyc. Pl. 714. Ballart and Guenot, Mat. Med. 314. Persoon, El. Mat. Med. 400. Guss. Med. Bot. 297. Carion, Hist. Med. Bot. L. 58. Gray, Bot. N. U. S. 217. Beach, Fam. Pl. 659. Howard, Bot. Med. 257. Henry, Med. Herb. 186. Kunt, Mat. Med. 198. Wood, Class-Book, 234.

GENUS INULA.

From the Greek *Idemne*, said to have sprung from the tears of Helen.

SYNONYMS.—*L'Inula Amara* (Fr.), *Der Alant* (Ger.), *Gewoon Alant* (Dutch), *Kula* (It.), *Kula compans* (Sp.), *Dowjankik* (Russ.).

THE ESSENTIAL CHARACTERS.

CALYX. Closely adherent to the ovary, the limb wanting, or membranaceous and divided into bristles, hairs, &c., called *pyram*.

COROLLA. Superior, consisting of five united petals, either ligulate or tubular.

STAMENS. Five, alternate with the lobes of the corolla. Anthers cohering into a cylinder.

OVARY. Inferior, one-celled, one-ovuled. Style two-cleft, the inner margins of the branches occupied by the stigmas.

FRUIT. An achenium, dry, indehiscent, crowned with a pappus.

SEEDS. Solitary, quadrangular.

THE SECONDARY CHARACTERS.

INULA. Heads many-flowered. *Involute* imbricate. *Rays* flowers numerous, pistillate. *Disc-flowers* perfect. *Receptacle* naked. *Pappus* simple, scabrous. *Antlers* with two bristles.

Involute imbricate, generally squarose. *Leaf* simple, scabrous, sometimes a minute exterior chaffy one. *Antlers* ending in two bristles at the base. *Rays* flowers numerous, always yellow.

THE SPECIFIC CHARACTERS.

INULA HELENIUM. *Leaves* amplexicaul, ovate, rugose, downy beneath. *Involute* scales ovate. *Flowers* large, solitary, terminal, of a bright yellow. *Rays* linear, with two or three teeth at the end.

Leaves clasping, ovate, rugose, tomentose beneath. *Scales* of the *involute* ovate.

THE ARTIFICIAL CHARACTERS.

CLASS SYNGNETHA. *Stamens* five, cohering by the tips of their anthers. ORDER POLYGAMIA. Herbaceous plants. *Flowers* or *florets* collected into dense heads (compound flowers). *Corolla* monopetalous, of various forms.

NATURAL HISTORY.

INULA HELENIUM is an indigenous perennial, native of Europe, naturalized and now very common in the United States; a large, herbaceous, coarse-looking plant, common by roadsides and occasionally in pastures and rich, moist soils. It flowers in July and August, and ripens its seeds in September. The root is thick, branched, externally of a brown or gray color, and internally white. The stem, which rises from four to six feet high, is leafy, round, and furrowed, branched near the top, and villous. The leaves are large, ovate, serrated, veined, of a deep green color on the upper surface, and on the under reticulated, tomentose, and whitish. The radical ones are petiolate, but those of the stem are sessile and embracing. The flowers are terminal, solitary, large, and of a golden-yellow color. The calyx is scaly, the exterior scales are large, ovate, imbricated, and externally tomentose, the interior are narrow, linear, equal, and chaffy. The florets of

the ray are numerous, spreading, twice the length of the calyx, linear, with the apex tridentate. The anthers end in two bristles at the base. The seeds are quadrangular, smooth, slightly curved, and furnished with a somewhat chaffy pappus. The receptacle is reticulate and papillose. The roots of *Elecampane* found in the stores are generally obtained from garden plants. They are fit for use in the second year of their growth, and at this age are preferable to older roots, which become stringy and woody. They should be dug in autumn.

Elecampane is propagated by offsets in autumn, after the plant has done flowering; these, if planted in a deep soil, rather moist, or in a shady situation, will be fit for use by the end of the second year.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The root of the *ISOLA SELENIUM* is the official part. When fresh it is very thick and branched, having whitish cylindrical ramifications which are furnished with thread-like fibres. It is externally brown, internally whitish and fleshy, and the transverse sections present radiating lines. The dried root, as found in the stores, is usually in longitudinal or transverse slices, and of a yellowish-gray color internally. The smell is aromatic or camphoraceous, yet slightly fetid, and when chewed the taste is at first disagreeable, glutinous, and in some degree resembling that of rancid soap, then aromatic, bitter, and hot. Iodine colors the root brown. Sesquichloride of iron produces in the infusion a green color.

According to the analysis of Funcke, *Elecampane* contains,—1. A volatile oil, which crystallizes; 2. A peculiar fecula; 3. Bitter extractive matter; 4. Free acetic acid; 5. Resin; 6. Albumen; 7. Fibrous matter. Both water and alcohol extract its virtues, the tincture possessing more of the bitterness and pungency of the root than the watery infusion. In the bitter extractive matter resides the tonic property of *Elecampane*. The decoction, after standing some hours, deposits a white powder resembling starch in appearance, but its properties show it to be a distinct principle, and it has therefore been named *Iasin*, which term has been generally adopted. It differs from starch in being deposited unchanged from its solution in boiling water when the liquor cools, and in giving a yellowish instead of a blue color with iodine. This *Iasin* has been found in the roots of several other plants, and is an amylaceous substance, organized, according to Raspail, like common starch. It is very slightly soluble in cold water, but very soluble in boiling water, from which it is deposited

as the solution cools. It is slightly soluble in boiling alcohol. Iodine gives it a yellow tint; this distinguishes it from ordinary starch. Besides this principle, Elecampane contains, according to John, a white concrete substance called Helenin or Elecampane-camphor, intermediate in its properties between the essential oils and camphor, colorless, prismatic crystals, heavier than water, fusible, volatile, very soluble in ether, oil of turpentine, and boiling alcohol, but insoluble in water. Nitric acid converts it into resin.

INULA HELENIUM is usually ranked as a tonic and gently stimulant. It acts likewise as an excitant, on account of the camphorated volatile oil which it contains. It is supposed to possess deobstruent, diuretic, and expectorant properties. In its operation it is allied to Sweet Flag. It has been regarded as a remedy of great efficacy, especially in the complaints peculiar to females, and it is still occasionally resorted to with good effect in cases of retained or suppressed menstruation. It likewise possesses the general properties of a strengthening, restorative medicine, and may be used accordingly. The root is an excellent pectoral, and is very beneficial in coughs; it is also very advantageously used in chronic diseases of the lungs, and is particularly beneficial when the affection of the chest is attended with weakness of the digestive organs, or with general debility. In dyspepsia, attended with relaxation and debility, it has been administered with considerable benefit. On account of the deobstruent and diuretic virtues which the root of this plant possesses, it is successfully prescribed in chronic engorgements of the abdominal viscera, and the dropsy, to which they so often give rise. It has also been highly recommended both as an internal and external remedy in tetter, pox, and other diseases of the skin. It is employed in the exanthemata to promote the eruption. In general, the root of the plant may be said to attenuate viscid phlegm, relieve humoral cough and asthma, excite urine and insensible perspiration, gently loosen the bowels, strengthen the stomach and the tone of the viscera.

It may be taken alone, in powder or decoction, or it may be combined with other articles and formed into a sirup for all the above diseases. A teaspoonful of the pulverized root may be taken three times a day in molasses, together with a tenceupful of a decoction of one pound of the dried root boiled to three quarts, taken night and morning.

Elecampane, comfrey, and slippery elm, boiled to a sirup and mixed with honey, and taken freely three or four times a day, is an excellent remedy for coughs. This sirup will be found to loosen the phlegm and quiet the tickling. If rightly used, it will often cure.

It is sometimes given to horses that are troubled with the heaves.





N° 42.

POLYGALA SEROTINA.

Sejuka Snake-root.



POLYGALACEÆ.

The Milkwort Family.

No. 42.

POLYGALA SENECA.

SENECA SNAKEROOT. *Mountain Phlox*.

Geog. Position. United States.

Quality. Acid, astringent.

Power. Sudorific, expectorant, diuretic, cathartic.

Use. Bite of rabid animals, rheumatic affections, croup, &c.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER POLYGALACEÆ.

Linnean Classification.

CLASS XVII. *Dioecia*. ORDER *Octandria*.

ARTHURIA. — *Lia*. Sp. Pl. 390. *Walt.* Sp. Pl. 894. *Woodr.* Med. Bot. 33. *Parsh.* Fl. N. A. 464. *Link.* Fl. Med. 121. *Engelm.* Med. Bot. II. 30. *Benth.* Loc. 340, No. 435. *Benth.* Veg. Med. Bot. II. 131. *Ref.* Med. Fl. II. 61. *Whitl.* Med. Bot. 137. *Leont. Disp.* 511. *U. S. Disp.* 668. *Ec. Disp.* U. S. 320. *Palmer.* Bot. 75, 264. *Leont.* *Koenig.* Pl. 902. *Hallard and Garrod.* Med. Bot. 214. *Thomson.* Med. Bot. 1018. *Ferriss.* *Ec. Mac.* Med. 418. *Gill.* Med. Bot. 275. *Carron.* *Herb. Med. Bot.* I. 19. *Gray.* Bot. N. U. S. 89. *Beach.* *Fl.* 668. *Howard.* Bot. Med. 283. *Hewey.* Med. Herb. 221. *Wood.* *Class-Book.* 172.

GENUS POLYGALA.

From the Greek *polys*, many, and *gala*, milk, from its milky juice.

SYNONYMS. — *Le Polygala* (Fr.), *Die Knechtzhanne* (Ger.), *Knechtzhanne* (Dutch), *Polygala* (It.), *Polygala* (Sp.), *Flora Faga* (Jap.), *Israd* (Russ.), *Wyocha Koniua* (Pol.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals five, very irregular, three exterior, two interior (wings), larger and petaloid.

COROLLA. Petals three, hypogynous, the anterior keel-shaped, larger than the others.

STAMENS. Six—eight. Filaments contained in a tube which is split on the upper side, and coherent to some extent with the claws of the petals.

OVARY. Superior, compressed, two-celled, one cell often abortive. Style curved and often cucullate.

FRUIT. Loculicidal or indehiscent.

SEEDS. Pendulous.

POLYGALA SENECA.

THE SECONDARY CHARACTERS.

POLYGALA. Sepals five, persistent, two of them wing-shaped. Capsule obcordate, two-celled, two-valved, two-seeded. Seeds carunculate, petaloid. Petals three.

Calyx five-sepalled, persistent, unequal, two of them wing-like, larger, colored. Corolla irregular (or radially), calyx three-sepalled, corolla imperfectly papilionaceous. Capsule obcordate, two-celled, two-valved. Knot of the corolla sometimes appendaged. Stems hairy.

THE SPECIFIC CHARACTERS.

POLYGALA SENECA. Stem erect, smooth, simple, leafy. Leaves alternate, lanceolate, tapering at each end. Flowers slightly crested, in a terminal spike-form, slender raceme.

Stem erect, simple, leafy. Leaves alternate, lanceolate. Spike terminal, slender. Flowers alternate, not crested.

THE ARTIFICIAL CHARACTERS.

CLASS DIADELPHIA. Stamens united by their filaments, forming two sets. **ORDER OCTANDRIA.** Petals three, the lowest one carinate. Sepals five, two of them winged and colored.

NATURAL HISTORY.

The **POLYGALA SENECA** is a native of every part of the United States, though it is most abundant in the Southern and Western States, where it is collected in great quantities and exported in tales of from two to four hundred weight. The root, as it occurs in commerce, varies from the size of a small quill to that of the little finger. It presents a thick, knotty head, which exhibits the traces of the numerous stalks, and from which proceeds a moderately thick, tapering root, that is branched, twisted, and covered with a corrugated, transversely cracked epidermis, which is yellowish-brown in the young and brownish-gray in the old roots. The root frequently exhibits crowded annular protuberances, and has a projecting keel-like line extending along its whole length. The bark is thick, hard, and resinous, and contains the active principle of the plant; the central woody part is white and inert.

"The Seneca Sankeroot," says Bigelow, "is firm, hard, branching, and perennial, consisting of a moderately solid wood and a thick bark. The root sends up a number of annual stems, which are simple, smooth, occasionally tinged with red. The leaves are scattered, nearly or quite sessile, lanceolate, with a sub-acute point, smooth, paler underneath. Flowers white, in a close terminal spike. The calyx, which

in this genus is the most conspicuous part of the flower, consists of five leaflets, the two largest of which, or wings, are roundish-ovate, white, and slightly veined. Corolla small, closed, having two oblong lateral segments, and a shorter crested extremity. Capsules obcordate, invested by the persistent calyx, compressed, two-celled, two-valved. Seeds two, oblong-ovate, acute at one end, slightly hairy, curved, blackish, with a longitudinal, bifid, white appendage on the concave side. The spike opens gradually, so that the lower flowers are in fruit while the upper ones are in blossom."

This genus *POLYGALA* is a beautiful example of the manner in which occasional irregularities in structure are compensated by nature. When we examine the stamens, we find them possessing the character of the Leguminosae, one of the most distinctly marked of all the natural orders. Instead, however, of the papilionaceous flower, with its keel and banner and wings, we have a tubular corolla approaching to the character of the Labiate. To make up for the absence of the wings, the two lateral segments of the calyx are expanded into roundish-ovate, flattened, wing-like leaves, which are white, like petals, and may be considered as a part either of the calyx or corolla.

The plant grows in peat soil, and young cuttings root freely in sand; the harder sorts prefer a similar soil, and are increased by dividing at the root or by seeds.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Seneca Snakeroot has a faint aroma, which is at first not unlike that of ginseng, but soon becomes nauseous. The taste is at first mucilaginous and sweetish, and being chewed becomes somewhat pungent and acid, and produces a very peculiar irritating sensation in the fauces. These properties are communicated to the watery decoction, which is more acrid than the alcoholic tincture, and, although not unpleasant to the taste at first, soon manifests the peculiar pungency of the root, spreading through the fauces, or exciting a copious discharge of saliva, and frequently a short cough. This root communicates neither taste nor smell to water distilled from it. Alcohol extracts its virtues, and the tincture is decomposed by the addition of water, which precipitates a resinous principle. The whole virtues of the plant are extracted by proof-spirits, although the decoction is, for practical purposes, the most efficacious preparation.

POLYGALA SENEGA has been repeatedly made the subject of chemical investigation. According to Mr. Gehlen, this

root contains *Senegia*, resin, sweet extractive matter, gum and albumen, ligneous fibres, &c. According to Dr. G. Folchi, it is composed of a thick oil, partly volatile, free gallic acid, an acrid matter, a yellow coloring matter, a little wax, a gummy extract, a matter containing nitrogen, similar to gluten, woody fibres, sub-carbonate, sulphate and muriate of potassa, carbonate, sulphate, and a little phosphate of lime, carbonate of magnesia, iron, and silica. Mr. Peschier, an eminent pharmacist of Geneva, asserts that he obtained from the *POLYGALA SENEGA* three new substances, which he calls *Polygalin*, *Polygalic Acid*, and *Isolis*. The first two substances form in the root a polygalate of polygalina.

Senegia appears to be the active principle of *Polygala*. It is solid, brown, translucent, of an unpleasant taste; when it is reduced to powder, its smell provokes sneezing. It is insoluble in water and ether, but easily soluble in alcohol.

Seneca Snakeroot is a very energetic stimulant, and in large doses often produces vomiting and alvine evacuations. In moderate doses this remedy increases absorption, and consequently augments the natural excretions, particularly that of urine, and frequently occasions a copious ptyalism.

The root of this plant was introduced into medicine as a remedy for the bite of the rattlesnake and other venomous animals, in the early part of the last century, by Dr. Tennant, a Scotch physician residing in Pennsylvania, who, reasoning from the effects of the poison, and of the remedy in removing them, was induced to try it in putridonic affections, and found it useful. On account of its stimulant properties, however, it can be employed in these complaints only after the resolution of the inflammation by evacuations or other means.

It proves more directly useful in humoral asthma, chronic catarrh, and some kinds of dropsy, and has been found very efficacious in rheumatic and scrofulous ophthalmia, even after pus had appeared in the anterior chamber. The extract, combined with carbonate of ammonia, has been found efficacious in some cases of lethargy; and the decoction given in divided doses, at short intervals, till it vomit or purge, has been employed very successfully in croup. It has also been used as a stimulant gargle in the same disease.

In Germany, according to Dr. Ammon, it is administered internally with great success in the treatment of very acute ophthalmia, in which the antiphlogistic remedies so often fail. Dioscorides says that the plant was believed to excite the lactal secretions in women.

It may be administered either in the form of powder or decoction, combined with aromatics, opium, or camphor, which check its nauseating qualities. The dose in substance is from ten grains to one drachm, repeated every three or four hours.





Nº 43.

RIBES RUBRUM.

Common red Currant.





GROSSULACEÆ.

The Currant Family.

No. 43.

RIBES RUBRUM.

CURRENT. Common Red Currant.

Geog. Position. Europe, America.

Quality. Acid.

Power. Cooling, refrigerant.

Use. Inflammatory and putrid fevers, thirst.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER GROSSULACEÆ.

Linnean Classification.

CLASS V. *Pentandria.* ORDER Monogynia.

AUTHORITIES. — Lin. Sp. Pl. 290. Persh. Flor. N. A. 163. Lind. Flor. Med. 64. Raf. Med. Flor. II. 257. Whistl. Med. Disc. 37. U. S. Disp. 136. Ec. Disp. U. S. 348. Flamm. Bot. 49. 298. Lond. Encyc. Pl. 190. Gray, Bot. N. U. S. 642. Wood, Class-Book, 272.

GENUS RIBES.

An Arabic name of uncertain etymology, applied to the *Rubra Ribes*.

SYNONYMS. — *Le Grossulier commun* (Fr.). *Die Johannisbeere* (Ger.). *Aalbeet* (Dutch). *Ribes rubra* (H.). *Ribes roja* (Sp.). *Grossoliera verruculosa* (Purt.). *Sambodina kumaja* (Haw.).

THE ESSENTIAL CHARACTERS.

CALYX. Superior, four- or five-cleft, regular, colored, marcescent, imbricate in aestivation.

CORDILA. *Petals* inserted in the throat of the calyx, small, distinct, as many as sepals.

STAMENS. As many as petals and alternate with them, very short. *Anthera* introrse.

Ovary. One-celled, with two parietal placentae. *Ovules* numerous. *Styles* two.

FRUIT. A one-celled berry (the cell filled with pulp), crowned with the remains of the flower.

SEEDS. Anisotropous. The embryo minute. *Radicle* next the micropyle.

THE SECONDARY CHARACTERS.

RIBES. *Petals* five, inserted with the stamens into the calyx. *Style* bifid. *Berry* many-seeded, inferior.

Calyx bell-form, five-lobed, sometimes flat. *Covels* and stamens inserted on the calyx. *Style* two-lobed. *Berry* many-seeded.

THE SPECIFIC CHARACTERS.

RIBES RUBRUM. *Leaves* obtusely three- or five-lobed, smooth above, pubescent beneath, subcordate at base. *Margins* mucronately serrate. *Racemes* nearly smooth, pendulous. *Calyx* short, rotate. *Bracts* much shorter than the pedicels. *Fruit* globose, glabrous, red. N. B. The variety **RIBES ALBUM**, the White Currant, has light amber-colored berries, larger and less tart than the **RIBES RUBRUM**.

Unarmed. Racemes globose, nodding. *Covels* 5-lobed. *Petals* 5-lobed. *Leaves* deeply five-lobed. *Stems* erect.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. **STAMENS** FIVE. **ORDER** MONOGYNIA. Polypetalous. *Flowers* superior. *Shrub*. *Leaves* deciduous. *Calyx* extending above the ovary.

NATURAL HISTORY.

The **RIBES RUBRUM** is a native of the mountains, hills, woods, and thickets of the temperate parts of Europe, Asia, and America. They are unknown in Africa, the tropics of either hemisphere, or the South Sea Islands. In North America they are particularly abundant, and on the mountains of Northern India they contribute to give a European character to that remarkable region.

The name *Currant* is said to be derived from the resemblance in the fruit to the little *Covistâ* grapes or raisins, which under the name of *Currants* are sold in a dried state in such quantities by grocers; the latter word being only a corruption of *Covistâ*, and this little grape being familiarly known as such long before the common currants were cultivated.

The Currant is an exceedingly hardy fruit-bearing shrub, seldom growing more than three or four feet high. The fruit of the original wild species is small and very sour, but the large garden sorts produced by cultivation, and for which we are chiefly indebted to the Dutch gardeners, are large, and of a more agreeable, sub-acid flavor.

In the examination of the flower of the common Currant, the following will be found to be its structure. The calyx is a little globular cup, green without and purple within; its border is marked by five indentations, which show it to consist of five sepals. At its mouth are five small scales, which are the petals, and between these are the stamens, which are also five in number. In the centre of these will be seen a single style, cleft at the top into two small stigmas, and these arise from an ovary which is situated below the calyx, imbedded as it were in the flower-stalk, very much as in the Carter. The ovary is one-celled, and contains a considerable number of ovules arranged upon two parietal placentæ.

Nothing is more easy of culture than the Currant, as it grows and bears well in any tolerable garden soil. To propagate it, it is only necessary to plant in the autumn, or early in the spring, slips or cuttings, a foot long, in the open garden, where they will root with the greatest facility. The Currant should never be allowed to produce suckers, and in order to insure against this, the superfluous eyes or buds should be taken out before planting it. When the plants are placed where they are finally to remain, they should always be kept in the form of trees; that is, with single stems, and heads branching out at from one to three feet from the ground. The after treatment is of the simplest kind: thinning out the superfluous wood every winter is all that is required. Where berries are required of an extra large size, *stop* or *pinch* out the ends of all the strong growing shoots, about the middle of June, or as soon as the fruit is two-thirds grown. This forces the plant to expend all its strength in enlarging and maturing the fruit. It is also best not to continue the cultivation of Currant-trees after they have borne more than six or eight years, as finer fruit will be obtained, with less trouble, from young plants, which are so easily raised.

The season when currants are in perfection is midsummer, but they may be prolonged until October by covering the bushes with mats or sheltering them otherwise from the sun. The common Red and the common White Currants are totally undeserving a place in the garden, when those very superior sorts, the White and Red Dutch, can be so readily obtained.

All the different kinds of Currants are varieties of one species, except the Black Currant (*Ribes nigrum*), which is a distinct species, of which no varieties have been obtained. The

branches are weak, and the bark is smooth, with large leaves and coarse growth, and the whole plant has a strong odor, disagreeable at first to many persons. The flowers are greenish and hollow. The fruit is a large berry, and black. This species grows wild in Russia, where the juice of its berries is made into wine, and in Siberia the leaves are used as tea.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

CURRENTS, perfectly ripe, are an agreeable fruit, and perfectly wholesome when eaten in moderation; they have less of a laxative effect upon the bowels than strawberries or gooseberries. The skin and seeds are in a great measure indigestible, and as these constitute a large portion of the dried currants that are imported, these are very apt to cause more or less irritation of the stomach and bowels; this indicates the necessity of great caution in their use. The plumpest and sweetest should be preferred.

RIBES NIGRUM, when ripe, contains malic acid, citric acid, sugar, gum, animal matter, lime, woody fibres, and seeds. The properties are those of the generality of the order, except that in other species a mawkish or extremely acid taste is substituted for the refreshing and agreeable flavor of the currant. It allays thirst, lessens an increased secretion of the bile, and corrects a putrid and scorbutic state of the fluids. RIBES NIGRUM, the black currant, is tonic and stimulant, and has fragrant glands upon its leaves and flowers.

The cooling acid flavor of the currant is very generally relished by most people in moderate quantities, and the larger varieties make also a handsome appearance on the table. Before fully ripe, in domestic use, the currant is stewed for tarts, like green gooseberries, and they are frequently employed along with cherries or other fruits in the same way; but one of the most valuable uses of this fruit is for making currant jelly, an indispensable and fashionable accompaniment to many dishes.

A sweet wine, of very pleasant taste, is made from the expressed juice of the currant, and very popular among farmers; that, however, which is afforded by the Isabella and Catawba grapes is every way to be preferred, because it may be made with less cost and trouble, and is infinitely more wholesome, requiring less additions of any kind to the pure juice. Currant shrub, made from the fruit in the same manner as lemonade, is a very popular summer drink in many parts of the country, and corresponds to the well-known Paris beverage, *Eau de Groseilles*.

The jelly of black currants is a medicine very much in esteem for complaints of the throat.



N° 44

CYPRIPEDIUM PUBESCENS.

Lady upon the Mountain

REPUBLICAN

The Daily Press

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PLATE I

Antirrhinum majus L.
Common Snapdragon

ORCHIDACEÆ.

The Orchis Family.

No. 44.

CYPRIPEDIUM ACAULE.

LADY'S SLIPPER. *Acaulescent Lady's Slipper.* *Nerve-root.*

Geog. Position. Europe, America.

Quality. Bitter, nauseating.

Power. Anodyne, nervine.

Use. Nervous irritability, spasm, &c.

BOTANICAL ANALYSIS.

Natural Classification.

Order ORCHIDACEÆ.

Linnean Classification.

Class XX. *Gymnandria.* Order *Diaandria.*

APPROPRIATE. — Lin. Sp. Pl. 1346. Mill. Sp. Pl. 143. Pers. Fl. N. A. 333. Raf. Med. Flor. 1. 146. U. S. Disp. 1323. Ec. Disp. U. S. 350. Eastw. Bot. 83. 218. Lond. Encyc. Pl. 738. Griseb. Med. Bot. 643. Gray. Bot. N. U. S. 471. Beach. Fam. Ph. 654. Howard. Bot. Med. 839. Kunt. Mat. Med. 312. Wood, Class-Book, 597.

GENUS CYPRIPEDIUM.

From the Greek *Kypripis*, Venus, and *pedum*, a slipper; in allusion to the elegant slipper-like form of the nectary, labellum, or lip.

SYNONYMS. — *Salus de la Vierge*, or *Soulier de Notre Dame* (Fr.), *Der Venusschuh* (Ger.), *Vrouwenschoen* (Dutch), *Pantofola* (It.), *Zoors* (Sp.), *Calçado de Nossa Senhora* (Port.), *Kokoshkiy Sapozhki* (Russ.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals three, usually colored, odd one uppermost by the twisting of the ovary.

CORDILAE. Petals three, usually colored, odd one lowest by the twisting of the ovary. *Lip* (labellum or lowest petal) diverse in form, often lobed, frequently spurred at base.

STAMENS. Three, united into a central column, the two lateral ones generally abortive, and the central one perfect; more rarely, the central abortive and lateral perfect. Anther two, four, or eight-celled, persistent or deciduous, often operculate. Pollen either powdery or cohering in waxy masses (pollinia), which are either constantly adhering to a gland, or becoming loose in their cells.

- OVARY.** One-celled, with three parietal placentæ. *Ovules* indefinite. *Stylar* consolidated with the stamens. *Stigma* a viscid cavity in front of the column.
- FRUIT.** Capsule, three-ribbed, three-valved.
- SEEDS.** Many, without albumen.

THE SECONDARY CHARACTERS.

CYPRIPEDIUM. The two lower sepals united into one segment, or rarely distinct. *Lip* ventricose, inflated, saccate, obtuse. *Column* terminated by a petaloid lobe (barren stamen).

Color colored, four-angled, spreading. *Corolla* wanting (by some the calyx is called a corolla). *Nectary* large, hollow, inflated. *Style* with a terminal lobe and petal-like appendage on the upper side.

THE SPECIFIC CHARACTERS.

CYPRIPEDIUM ACAULE. *Stem* leafless, one-flowered. *Leaves* two, radical, elliptic, oblong, rather acute. *Lobe of the column* roundish-rhomboidal, acuminate, deflexed. *Petals* linear-lanceolate. *Lip* longer than the petals, cleft above.

Stem leafless, one-flowered. *Leaves* radical, in pairs, oblong, acute. *Lobe of the style* round-rhomboid, acuminate, deflexed. *Lip* longer than the linear-lanceolate petals, split below.

THE ARTIFICIAL CHARACTERS.

CLASS GYNANDRIA. *Stamens* and *style* consolidated. **ORDER DIANDRIA.** *Endogena.* Herbs of grotesque and often beautiful forms, with corollas peculiarly irregular, and consisting of a perianth of six parts. *Seeds* numerous, small.

NATURAL HISTORY.

The natural order of the ORCHIDACEÆ, to which the *CYPRIPEDIUM ACAULE* belongs, is the most singular, the most fragrant, and the most difficult of culture. The flowers are often remarkable for their grotesque configuration, which has been likened to heads and bodies of animals, and for the strange character of their stems, which are sometimes attenuated into a degree of gracefulness scarcely equalled even among grasses, and sometimes contracted into a clumsy goutiness of figure such as is known nowhere else. It is remarkable, that, in a group so numerous as this, consisting as it does of more than two thousand known species, and probably as many more, which, being buried in the depths of unexplored tropical for-

ests, have not yet been found or described, and extending over almost the whole habitable globe as far as the borders of the frozen zone, there should be so few species possessed of properties that make them in any way useful to man. The ceder is remarkable for those qualities only which please the eye.

The root of the Lady's Slipper is perennial, with many long, thick, fleshy, cylindrical, and flexuous fibres, of a pale or dark yellowish cast, diverging horizontally and growing in a mat. Stems one to five, growing from the same root, simple, erect, often pubescent and angular, rising one or two feet, bearing from three to seven leaves, and from one to three yellow flowers. Leaves alternate, sessile, sheathing, ovate or oblong, acute, pubescent or smooth, but always entire and with many parallel nerves, green above, paler beneath. Flowers sessile; when more than one, each has a bracteal leaf. Germen concrete or inferior, green, cylindrical, often curved. Perigone with five unequal and different sepals, and sometimes called petals by the Linnæan school; two are external, oblong or lanceolate, acute, longer than the labellum, and green; two are internal, longer, narrower, spirally contorted and green; the fifth, or innermost and lower, called *Labellum*, is totally different from the others, shorter but larger, yellow with or without red spots, hollow like a bag, convex beneath, rounded in front, split above, with inflexed margins. Style and stamina concrete in the centre, above the germen, forming a central pillar, flattened above into an oblong deltoid lobe, supposed to be the stigma by some, and bearing before two anthers, lodged in separate cells. The fruit is an oblong capsule, with one cell, three valves, and a multitude of minute seeds.

There are several species as well as varieties of the *CYPRIPEDIUM*, some smooth and some hairy, and exhibiting a diversity of color in the blossom. All, however, very nearly correspond in the shape of the flower, which is of a singular form, and compared by some to a moccasin, and hence by the Indians termed *Moccasin-flower*.

This plant is found all over the United States, from New England to Louisiana, though it is very rare in some places. It blossoms in May and June, and is much valued in gardens for its beauty and singularity, but it is difficult to cultivate. It will seldom grow from seeds; the roots should be taken up with earth around them and transplanted in a congenial, rich, light soil. The plants should be covered with some dry straw

in very severe frosts, or if there should be too much wet; they are not easily increased, but will sometimes perfect seeds in favorable situations, particularly if pains be taken to apply the pollen to the stigma.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

It frequently happens that those productions of nature which charm the eye with their beauty, and delight the senses with their perfume, have the least relation to the wants of mankind, while the most powerful virtues or most deadly poisons are hidden beneath a mean and insignificant exterior; thus the *ORCHIDACEÆ*, beyond their beauty, can scarcely be said to be of known utility, with a few exceptions.

The *Lady's Slipper*, however, is one of the most valuable articles of vegetable medicine. Its operation upon the system appears to be in harmony with the laws of animal life, giving tone to the nervous system; and therefore is useful in all cases of nervous irritability, hysterical affections, spasms, fits, and all derangements of the functions of the brain, such as madness, delirium, &c., and in all cases of inability to sleep, particularly in fevers, consumptions, &c.

The properties of this plant are sedative, nervine, antispasmodic, &c., and accordingly it is the best substitute for *Valerian* in almost all cases. The roots are the officinal parts; they have a pungent, mucilaginous taste, and a peculiar smell, somewhat nauseous. From the result of several tests and experiments of eminent chemists, they contain extractive, gum, fecula, and a small portion of essential oil. In all nervous diseases and hysterical affections, the beneficial effects are produced by allaying pain, quieting the nerves, and promoting sleep. Good effects are also obtained in nervous headache, epilepsy, tremors, nervous fevers, &c. It is preferable to opium in most cases, having no baneful or narcotic effects. The dose is a teaspoonful of the powder, diluted in sugar-water, or in any other convenient form. The powder alone has been used, but an extract might be also efficient, unless the active principle is very volatile. As with *Valerian*, the nervine power is increased by combination with mild tonics.

Its exhibition in all cases where an anodyne effect is desired, is generally acknowledged beneficial.

The roots are the only part used, and they ought to be gathered in the spring before the tops begin to grow, or in the fall after they begin to die. After digging, they ought to be carefully separated, washed clean, and dried in the sun, or in a dry airy room. When fully dry, they should be packed away in barrels, or pulverized and bottled for use.

Boiling or scalding impairs the strength of the properties of the roots of the *Lady's Slipper*.



№ 45
NYMPHAEA ODORATA
Water lily.

SYNOPSIS OF
THE NEW-*July* Family

No. 10

SYNOPSIS OF THE

SYNOPSIS OF THE NEW-*July* Family

July 1881, 1882.

July 1881, 1882.

July 1881, 1882.

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SYNOPSIS OF THE

SYNOPSIS OF THE NEW-*July* Family

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July 1881, 1882.



NYMPHÆACEÆ.

The Water-Lily Family.

No. 45.

NYMPHÆA ODORATA.

SWIFT-SCENTED WATER-LILY. *White Pond-Lily.*

Geog. Position. Europe.

Quality. Fragrant.

Power. Astringent, tonic, cooling.

Use. Diarrhea, dysentery, tumors, ulcers, &c.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER NYMPHÆACEÆ.

Linnean Classification.

CLASS XIII. *Polyandria.* ORDER Monogamia.

AUTHORITIES.—Lin. Sp. Pl. 729. Willd. Sp. Pl. 1153. Persh. Flor. N. A. 358. Buplew. Med. Bot. II. 55. Raf. Med. Flor. II. 44. Whitl. Med. Disc. 104. U. S. Disp. 1338. Fe. Disp. U. S. 272. Faxon, Bot. 65, 328. Lond. Encyc. PL 442. Griseb. Med. Bot. 119. Gray, Bot. N. U. S. 37. Boeckl. Fam. Pl. 659. Howard, Bot. Med. 272. Kunt. Mat. Med. 467. Wood, Class-Book, 154.

GENUS NYMPHÆA.

From the Greek *Nymphæa*, belonging to Nymphs or Naiads, who were supposed to inhabit pure and running water.

SYNONYMS.—Le Nymphæe (Fr.), Die Secklump (Ger.), Plouqua (Dutch), Nymphaea (It.), Nympha (Sp.), Nymfæ (Egypt), Wadma Loh (Pers.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals and petals numerous, imbricated, gradually passing into each other.

COROLLA. Sepals persistent. Petals inserted upon the disc, which surrounds the pistil.

STAMENS. Numerous, in several rows upon the disc. Filament petaloid. Anther adnate, introrse.

OVARY. Many-celled, many-seeded, surrounded by a fleshy disc.

SEEDS. Attached to the spongy placenta, and enveloped in a gelatinous aril.

Flowers large, showy, often sweet-scented.

THE SECONDARY CHARACTERS.

NYMPHÆA. *Sepals* four—five. *Petals* inserted on the torus at its base. *Stamens* gradually transformed into petals. *Stigma* surrounded with rays. *Pericarp* many-celled, many-seeded.

Calyx four to seven-sepalled. *Ovella* many-petalled. *Petals* about equalling the length of the sepals, attached to the gyno beneath the anthers. *Stigma* a broad disc, marked with radiated lines. *Pericarp* berry-like, many-celled, many-seeded.

THE SPECIFIC CHARACTERS.

NYMPHÆA ODORATA. *Leaves* orbicular, cordate, entire, with veins prominent beneath. *Calyx* four-sepalled, equalling the petals. *Stigma* fifteen—twenty-rayed.

Leaves round-cordate, entire, rib-emarginate. *Leaves* spreading upward, acuminate, obtuse. *Petals* equalling the four-sepalled calyx.

THE ARTIFICIAL CHARACTERS.

CLASS POLYANDREA. *Stamens* twenty or more, arising from the receptacle (hypogynous). **ORDER MONOGYNIA.** *Ovaries* compound. *Placenta* occupying the whole surface of the dissepiment. *Stigma* radiate.

NATURAL HISTORY.

The Water-Lily is one of the most lovely of flowers, possessing beauty, delicacy, and fragrance in the highest degree. It grows only in ponds and quiet streams, where the water is of sufficient depth to protect the plant from the frosts of winter. The rhizoma is several inches in diameter, extending in its muddy bed beneath the water to a great length, and sending up leaves and flowers to the surface. The leaves are nearly round, entire, of a fine glossy green, cleft at the base to the petiole, and floating on the surface of the water. The flowers consist of four sepals, white within, numerous, lance-shaped petals of the most delicate whiteness, often tinged externally with red, and a great number of yellow stamens beautifully curved. The filaments are gradually dilated from the inner to the outer series, so as to pass insensibly into petals. The plant flowers in July, sometimes in such profusion as to mantle the surface of the water, and perfume the air with exquisite fragrance.

The flower of the Water-Lily offers many points of interest. It consists of about twenty-five thickish, oblong leaves of a white color, arranged in whorls of five each; the five exter-

mal ones are green at the back, and may be regarded as forming the calyx; towards the interior of the flower the petals gradually become smaller, and are tipped with yellow at their points, which are thickened. From these a very gradual transition takes place towards the form of the stamens, and the inner rows of stamens (which are usually all together about fifty in number) shorten and produce less perfect anthers. The ovary has the lower floral leaves adherent to it, so that the stamens appear to arise from just below the stigmas. It consists of ten or eleven distinct carpels, which adhere closely together, their several walls still forming complete partitions in the ovary, each chamber or cell of which contains a large number of ovules. The ovary is surmounted by a number of orange-coloured stigmas, radiating from the centre very much as in the Poppy; but as they are all united at the centre, they are considered as forming but a single pistil, and are therefore arranged in the artificial class and order as above. The tribe is most abundant in the northern hemisphere, and has been said to be entirely absent from South America; but a species has recently been discovered there, which in size and splendor far surpasses all others. This is the *Victoria regalis*, of which the leaf is from five to six feet in diameter, salver-shaped, with a rim rising from its edge of from three to five inches high, green inside and crimson on the exterior. The flower is of proportional dimensions, the expanded calyx sometimes attaining a diameter of twenty-three inches; this contains several hundred pistils, which are at first of a white hue, passing gradually towards pink in the centre, and those nearest it becoming pink throughout. As in the common Water-Lily, the petals gradually change into stamens towards the interior of the flower; those next the calyx are fleshy and contain air-cells, which contribute towards the buoyancy of the flower.

Much controversy has arisen as to whether the order to which the Water-Lily belongs should be ranked among exogens or endogens. The number of the parts of the flower, however, which are arranged in fives, ranks the order with exogens, of which the number five is characteristic. The structure of the seed confirms this conclusion, for the embryo is a little dicotyledonous body, inclosed in a peculiar bag, which has been erroneously supposed a cotyledon, and the seed has thus been considered monocotyledonous.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The properties of the *Nymphaea odorata* are astringent, tonic, deobstruent, and cooling. The taste is styptic and bitter when fresh. The plant contains a large quantity of tannin and gallic acid; also starch, mucilage, sugar, resin, ammonia, ulmine, tartaric acid, &c. From various experiments it is found to dye a dark brown and black color with iron. It is said to be preferable to *Statice* or *Geranium maculatum* in almost all cases, being milder and quite as efficient. It is particularly excellent for removing morbid matter of every kind from every portion of the animal frame, being well calculated to promote the healthy action of the organs, and of course the result of its use will be the recovery of tone to the system.

Externally, the roots and leaves are used for poultices in bites, inflamed tumors, scrofulous sores, and inflamed skin, and they are extolled as amongst the best articles for the purpose. In all cases, the poultice is an excellent sedative to ease pain, and, where there is a high state of inflammation, to reduce the swelling. The poultice may be prepared in the following manner:—To a teaspoonful of the fine powder, add a gill of boiling water, a teaspoonful of slippery elm (*Ulmus fulva*): stir well together, then thicken with Indian meal, or what is better, Boston crackers made fine.

Internally the roots are recommended in diarrhoea, dysentery, internal inflammations, ulcers, or morbid discharges. They may be taken in decoction alone or with tonics. A preparation may be made, sometimes called the *Syrup of Slices*, in the following manner:—Take a handful of the flowers (some consider the roots preferable), steep them moderately in a quart of water, over a slow fire, for an hour; then strain, and sweeten well with loaf-sugar, grate in a little nutmeg, and add half a pint of brandy. This syrup is an excellent article for children when teething, or in looseness of the bowels.

The fresh roots sometimes act as a rubefacient externally; the dry ones, however, are best for use; they are of a cooling, astringent nature. Country people take the juice of the roots with great success for the whites. The powder is likewise used for the same purpose, and for weakness and debility. The fresh roots sliced and infused in wine restrain immoderate menstrual discharges, and assist purgings, particularly where the stools are accompanied with blood. The fresh juice of the roots, mixed with lemon-juice, is said to be a good cosmetic, and to remove pimples and freckles of the skin. Half a pint of an infusion of the root, in the proportion of a pound to a gallon of water, taken twice a day for a considerable time, cured an obstinate leprosy eruption on the arm.

The most proper time to gather the root of this plant is in the fall, after the stalk is withered and the ponds are low.



№ 46.
DIGITALIS PURPUREA.
Fox glove.

THE UNIVERSITY OF CHICAGO

THE DIVISION OF THE PHYSICAL SCIENCES

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SCROPHULARIACEÆ.

The Figwort Family.

No. 46.

DIGITALIS PURPUREA.

POXCLOVE. *Purple Foxglove, Finger-Flower.*

Geog. Position. Europe.

Quality. Bitter.

Power. Narcotic, diaphoretic.

Use. Dropsy, palpitation of the heart, inflammatory diseases.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER SCROPHULARIACEÆ.

Linnean Classification.

CLASS XIV. *Didymia.* ORDER *Angiosperma.*

ARBORESCENS.—*Lia.* Sp. Pl. 368. *WILLD.* Sp. Pl. 383. *WOODW.* Med. Bot. 318. *LINDL.* Fluc. Med. 502. *HAMON.* Lec. 133, No. 229. *LAND.* Disp. 328. *U. S.* Disp. 384. *Ec. Disp.* U. S. 133. *ESTES.* Bot. 71, 324. *LEACH.* Encyc. Pl. 530. *BALLARD* and *GARR.* Med. Bot. 518. *THOMSON.* Mat. Med. 457. *FURCRA.* El. Mat. Med. II. 296. *GILL.* Med. Bot. 520. *CARSON.* Illust. Med. Bot. II. 17. *GRAY.* Bot. N. U. S. 294. *BEACH.* Fam. Pl. 454. *HENRY.* Med. Herb. 123. *WOOD.* Class Book. 464.

GENUS DIGITALIS.

From *Lat. DICTYONUM*, a thistle, or *finger of a glove*, from the resemblance and the form of flowers. Named by Fuchs.

SYNONYMS.—*La Digitale* (Fr.), *Der Fingerhut* (Ger.), *Vingehood* (Dutch), *Digiale* (It.), *Digital* (Sp.), *Digital* (Port.), *Sapewick* (Russ.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals four or five, unequal, more or less united at base, inferior, persistent.

COROLLA. Bilabiate, personate, or otherwise irregular; the lobes imbricate in aestivation.

STAMENS. Four, didynamous, rarely with the rudiment of the fifth; sometimes two only, the three others either rudimentary or wholly wanting.

Ovary. Free, two-celled, many-seeded. Style simple. Stigma two-lobed.

FRUIT. Capsule, two-celled, two-valved, with central placenta.
SEEDS. Indefinite, albuminous. Embryo straight.

THE SECONDARY CHARACTERS.

DIGITALIS. Calyx five-parted. Corolla campanulate, ventricose, in five subequal lobes. Capsule ovate, two-celled, two-valved, with a double dissepiment.

Calyx five-parted. Corolla bell-form, ventricose, five-lobed. Sepals simple or bilobulate. Capsule ovate, two-celled. Flowers racemed.

THE SPECIFIC CHARACTERS.

DIGITALIS PURPUREA. Leaves oblong, rugose, crenate. Calyx segments ovate-oblong. Corolla obtuse, upper lip entire. Pedicel as long as the calyx.

Sepals ovate, acum. Corolla obtuse, upper lip entire. Leaves lance-ovate, rugose.

THE ARTIFICIAL CHARACTERS.

CLASS DIDYNAMIA. STAMENS four, two of them longer than the other two. **ORDER ANGIOSPERMIA.** Seeds in a pericarp. Calyx inferior. Herbs. Herbage green. Seeds many. Calyx imbricate in aestivation.

NATURAL HISTORY.

FOXGLOVE is an indigenous biennial plant, found growing generally on the sides of hills and roads where the soil is dry, sandy, or gravelly. It flowers from the middle of June to about the middle of August. The root is knotty and fibrous, sending up an erect stem about four feet in height, round, downy, and leafy. The lower leaves are in tufts, large, about eight inches in length and three in breadth, ovate and pointed, with bordered fleshy peduncles; the upper or stem leaves are alternate, sparse and lanceolate, and both kinds have bluntly-serrated, nearly crenate edges and wrinkled velvety surfaces, with the upper surface of a beautiful deep-green color, and the under paler and more downy. The flowers, which are numerous, are attached on footstalks to one side of the upper part of the stem, so as to allow them to hang down and form a very elegant terminal spike. At the base of each footstalk is a sessile, pointed floral leaf. The uppermost segment of the calyx is narrower than the other four. The corolla is monopetalous, of an oblong bell-shape, and about the size of the little finger of an ordinary glove, bellying on the lower

side, with a short, tubular base. The upper lip is lightly cloven, and more reflected than the under, which is larger. The corolla is guarded by long hairs at the mouth; its general color is a bright pinkish-purple, with the tube white, and the bell-shaped part sprinkled on the inside with dark purple spots on a white ground, which give to the outside a speckled appearance. The filaments are white, curved, bearing large, oval, yellow anthers. The germ is pointed, supporting a simple style with the apex cloven. The seed-vessel, which is a pyramidal capsule with a double partition, produced by the inflated margins of the valves, contains many small ferruginous punctated seeds.

The plant is of easy culture. The leaves should be gathered in the months of June or July, just when the plant comes into flower, and the midrib and stalk removed.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The leaves of *DIGITALIS* are the only official part. They are of a bright green color when properly preserved, with scarcely any odor, but the taste is nauseous and acrid. They consist of volatile oil, a concrete, flocculent, volatile matter, fatty matter, extractive, tannin, &c.; and according to some, a peculiar alkaloid, which has been named *Digitalia*. The leaves yield their active properties to water, alcohol, ether, and the weak acids. The sesqui-salts of iron produce a dark, and solution of gelatin a white, fleshy precipitate with infusion of *DIGITALIS*, indicating the presence of tannin.

DIGITALIS, in small doses, gradually augmented, operates as a special stimulant to the kidneys, increasing the secretion of urine; in somewhat larger doses, or when its use is continued for a longer period, it acts as a sedative to the vascular system. This medicine has acquired a high reputation in the various forms of dropsy, but later experience has shown that it proves most serviceable in those symptomatic dropsical effusions which take place in the cellular membrane of the extremities and of the face, and which depend on diseases of the heart, of the kidneys, or of the liver. It is also better adapted as a diuretic for persons of a weak or enfeebled habit of body, than for the strong or the robust; and should any inflammatory symptoms be present, antilogistic treatment should be had recourse to before employing *DIGITALIS*. The kinds of dropsy in which its effects are most useful are ascites, anasarca, hydrothorax, and that species of swelling which succeeds parturition, phlegmasia dolens, where the legs and thighs swell, become pale and semi-transparent, with pain in both groins. It has also been found of the greatest

service, when conjoined with nitrous acid, in the dropsy which occurs in broken-down constitutions that have been long harassed by mercury. DIGITALIS will not cure a dropsy attended with palsy, unsound viscera, or other complications of disease, but by allaying the urgency of the symptoms, it gains time for other medicines to act. No benefit has hitherto been obtained from its use in hydatids and hydrocephalus.

Foxglove is efficaciously employed in inflammatory diseases, in active hemorrhages, particularly from the uterine vessels, when the pulse is sharp, throbbing, and frequent, in mania, in scrofula, and in most cases of increased vascular action, or in which it is essential to lessen the usual impetus of the blood, as in aneurism. In mania it acts as a narcotic, soothing the nervous system, and procuring sleep to the patient. The tincture is the best form of administering it in this disease, and the dose may be carried to an extent far beyond that which can be prescribed in other cases.

By a proper exhibition of DIGITALIS, the frequency of the pulse may be diminished any number of pulsations, and regulated at the pleasure of the practitioner; whilst at the same time it admits, to a certain extent, of the employment of such medicines as increase the firmness of the arterial action and give tone to the habit. When given to the full extent of which the system can admit, it is apt to accumulate, the pulse intermits, and vertigo, indistinct vision, and nausea, with vomiting or purging, occur; and if after these indications the quantity be still increased, it produces delirium, hiccough, cold sweats, convulsions, syncope, and death.

Foxglove is administered in substance, or in decoction, or the watery infusion, or in tincture. When given in substance, it is frequently combined with aromatics, and most advantageously with squills, juniper, the diuretic salts of potash, when it is required only to produce its diuretic effect. It is always proper to begin with a very small dose of the powdered leaves given in a pill twice a day, and gradually to increase it till its effects are apparent either in the kidneys, the stomach, the pulse, or the bowels. The medicine should then be discontinued, but in dropsy it may be repeated after an interval, if the whole of the water be not evacuated. During its employment diuretics are useful and necessary, and immediately after it is discontinued, the strength should be recruited by generous food, steel, and cordial tonics. The deleterious effects of an overdose are to be counteracted by cordials; and, when these are not sufficient, by blisters.

The powder should be kept in closely stopped opaque phials.

In the employment of DIGITALIS as a medicine, its effects require to be carefully watched; the patient should not use any active exertion, and should be visited at least daily by the medical attendant.





Nº 41.

GAULTHERIA PROCUMBENS.

Checkerberry.

THE
THEATRE
OF THE
FUTURE

BY
J. H. M. J. VAN DER BEEK

Author of "The Theatre of the Future"

Translated by J. H. M. J. VAN DER BEEK

With a Preface by J. H. M. J. VAN DER BEEK

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ERICACEÆ.

The Heath Family.

No. 47.

GAULTHERIA PROCUMBENS.

CREeping WINTERGREEN. *Cheeberry.*

Geog. Position. Europe, America.

Quality. Aromatic.

Power. Stimulant, diuretic, stomachic.

Use. Chronic diarrhoea, toothache, debility arising from fatigue.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER ERICACEÆ.

Linnean Classification.

CLASS X. *Decandris.* ORDER *Monogynia.*

AUTHORITIES. — LIn. Sp. Pl. 543. WILK. Sp. Pl. 611. PARR. Flou. N. A. 282. LIND. Flou. Med. 289. BIGLOW, Med. Bot. II. 27. BARTON, Lec. 103, No. 281. BARTON, Veg. Med. Bot. I. 171. Nat. Med. Flor. I. 282. U. S. Disp. 517. Ec. Disp. U. S. 185. ELMER, Bot. 60, 250. LOND. ENCYC. Pl. 566. PERLIN, El. Mat. Med. II. 294. Goss. Med. Bot. 424. GRAY, Bot. N. U. S. 284. BOWEN, Foss. Pl. 623. HENRY, Bot. Med. 271. HENRY, Med. Herb. 12. WOOD, Class Bot. 271.

GENUS GAULTHERIA.

Named in honor of Dr. Gaultier, a French physician and botanist of Quebec. The real name of the physician (says Barton) was Gaudier, and how the letters *i* and *a* have crept into the word it is not easy to learn, unless by Latinizing the French Gaudier, which is Gaultier.

SYNONYMS. — *Stadlerogaultheria* (Ger.), *Thibaudia* (Swed.), *Pellon* (Canad. Ind.).

THE ESSENTIAL CHARACTERS.

CALYX. Inferior or superior, five- (seldom four- or six-) leaved or cleft, rarely entire.

COROLLA. Regular or somewhat irregular, four- or five- (rarely six-) cleft. The petals rarely almost distinct.

STAMENS. Generally distinct and inserted with the corolla. Anthers as many or twice as many as the lobes of the corolla, two-celled, generally opening by pores, often appendaged.

OVARY. Free, or rarely coherent with the calyx, two- or several-celled. Styles and stigmas united into one.

FRUIT. Capsular or baccate.

SEEDS. (Usually) indefinite and minute. Embryo straight, lying in the axis of, or in the end of, fleshy albumen.

THE SECONDARY CHARACTERS.

GAULTHERIA. Calyx five-cleft with two bracts at the base. Corolla ovoid-tubular. Limb with five small, revolute lobes. Filaments ten, hirsute. Capsule five-celled, invested by the calyx, which becomes a berry.

Calyx inferior, double. Outer two-sepalled. Inner five-cleft (or calyx five-cleft, with two bracts). Corolla ovate. Border small, five-cleft, revolute. Filaments hairy. Anthers ten-toothed (or with a ten-pointed socket). Capsule five-celled, invested with the inner berry-like calyx.

THE SPECIFIC CHARACTERS.

GAULTHERIA PROCUMBENS. Stem with the procumbent branches erect or ascending. Leaves obovate, mucronate, dentisulcate, crowded at the top of the stem. Flowers few, drooping, terminal.

Stem procumbent. Branches erect. Leaves obovate, acute at the base. Flowers few, nodding. Berries red, consisting in part of the permanent calyx, a little fleshy, pleasant tasted.

THE ARTIFICIAL CHARACTERS.

CLASS DIOECANDRIA. STAMENS TEN. ORDER MONOGYNIA. Fruit not a legume. Leaves not sensitive. Petals present, or if not, the plants have no green herbage.

NATURAL HISTORY.

GAULTHERIA PROCUMBENS is a pretty little evergreen, shrubby plant, very generally known for its spicy leaves and its well-flavored scarlet berries. It is found everywhere throughout the United States, from Canada to Pennsylvania and Kentucky, and is common in woods and pastures, delighting in a sandy or loose soil. It is particularly abundant in the pine barrens of New Jersey, and is brought to market in the months of November and December; and from the avidity with which it is bought up, it may be inferred that the plant is in very general use among the people.

The root is creeping, horizontal, and very long, sending up at short distances one, and sometimes two or more stems. The specific appellation is not very appropriate, for though the stems frequently are bent, thereby having the appearance,

among dead leaves and loam, of being procumbent, yet the upright position of the stem is equally, and perhaps more, common. The branches ascend from the rhizoma, which is usually concealed; they seldom exceed a span in height, are round, of a reddish color, and terminated by a few evergreen, oval, smooth, shining, coriaceous leaves, paler underneath, and somewhat spreading. The flowers are generally solitary, seldom exceeding three or five on a stem, and are supported by curved drooping peduncles of a yellowish-green hue. Calyx five-toothed, furnished with two bracts at the base, which have by some been considered as an exterior calyx. The corolla is white, contracted at the mouth, ovate, monopetalous, and terminated at its apex by five toothed indentures, which in shady woods are seldom open or spreading, though in sunny and exposed situations this sometimes happens. The pistil is short, simple above, dilated into a flat button at bottom, and surrounded by ten ciliated or plumous stamens. Filaments white, bent towards the corolla. Both filaments and anthers are of an agreeable delicate color. The flowers are succeeded by small capsules, contained in a roundish, berry-form, fleshy substance, of a carmine color, produced by an enlargement of the calyx. Fruit well-flavored, consisting of the capsule surrounded by the enlarged calyx, which becomes of a bright scarlet color. It possesses an aromatic peculiar flavor, and is extremely grateful to the taste.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The leaves of *GAULTHERIA PROCRUMBENS* are only officinal, though all parts of the plant are endowed with the peculiar flavor for which these are employed, and which is found in several other plants, particularly in the bark of the *Betula lenta* or Sweet Birch. To the very peculiar and agreeably aromatic odor and taste which belong to the whole plant, the leaves add a marked astringency, dependent on the presence of tannin. The aromatic properties reside in a volatile oil which may be separated by distillation. This oil is a product of the United States, and is prepared chiefly in New Jersey. When freshly distilled, it is nearly colorless, but as found in the stores it has a brownish-yellow or reddish color. It is of a sweetish, slightly pungent, peculiar taste, and a very agreeable characteristic odor, by which it may be readily distinguished from all other officinal oils. It is the heaviest of the known essential oils, and its unusual weight affords a con-

venient test of its purity. It is used chiefly on account of its pleasant flavor, to cover the taste of other medicines.

GAULTHERIA has the usual stimulant operation of the aromatics, united with astringency, and may therefore be used with advantage in some forms of chronic diarrhoea, and especially the bowel complaints of children. Many people in the country are in the constant habit of taking strong infusions of this tea, after great fatigue and undue exposure to heat or cold, and the relief they find from it under these circumstances arises doubtless from its stimulating and anodyne property. As it is a very grateful beverage, though not very active in its effects on the system, it will no doubt always prove a useful medicinal tea, particularly if its use be limited to those cases of depression of the system from the fatigue of labor, long journeys, or any other cause in which stimulating and refreshing beverages may be advantageously employed. But in cases of fever, and where the increased action of the system render it hurtful, it may be prudent not to use this tea so capable of much injury.

Like other substances of the same class, this plant has been employed as an emmenagogue, and with a view of increasing the secretion of milk; but its chief use is to impart an agreeable flavor to mixtures and other preparations. It may be conveniently administered in the form of infusion, which is not unfrequently used at the tables in some parts of the country as a substitute for common tea. The name, Mountain Tea, implies that it is thus used, and with decided good effect. During the American Revolution, it was a common practice to make a tea of the leaves of GAULTHERIA, and being sweetened with sugar and softened with cream, it was drunk instead of common tea or coffee.

The fruit possesses the peculiar flavor of the leaves in a high degree, and being at the same time sweetish, is much relished by some persons, and forms also a favorite article of food with partridges, deer, and other animals. The deer, particularly, are very fond of the berries of this plant, and they eagerly devour them wherever they are found; and it is a common opinion among the country people, to whom this fact is well known, that the peculiar and delicate flavor of venison is owing to this favorite food of the animal. One of the common names of the plant throughout the United States, *Deer-berry*, is sufficient evidence of this fact. Might it not be interesting to try the effects of these berries as food upon sheep or other animals prepared in their young state for our tables? It is not doubted that the peculiar delicate flavor of the flesh of the *Axis Vallisneria* is owing to its feeding upon the *Vallisneria Americana*; for if deprived of the opportunity of feeding on this article, the flesh loses that delicious flavor for which it is otherwise so remarkable.



NY 48
ZANTHOXYLUM AMERICANUM.
Prickly ash.

THE FORTY-SEVEN
THE FORTY-SEVEN
No. 10

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ZANTHOXYLACEÆ.

The Prickly-Ash Family.

No. 48.

ZANTHOXYLUM AMERICANUM.

NORTHERN PRICKLY-ASH. Toothache-Tree.

Geog. Position. United States.

Quality. Bitter, aromatic.

Power. Stimulant, tonic, analagogue.

Use. Rheumatism, toothache.

BOTANICAL ANALYSIS.

Natural Classification.

ORDER ZANTHOXYLACEÆ.

Linnean Classification.

CLASS XXII. *Dioecia.* ORDER *Pentandria.*

Authorities.—Lin. Sp. Pl. 1455. Willd. Sp. Pl. 717. Persh. Flor. N. A. 209. Lindl. Flor. Med. 215. Bigelow, Med. Bot., III. 156. Pursh, Loc. 289, No. 547. Raf. Med. Flor., II. 112. Whittow, Med. Diet. 194. U. S. Disp. 711. Ea. Disp. II. 8. 428. Eaton, Bot. 92, 492. Griseb. Med. Bot. 196. Gray, Bot. N. U. 8. 77. Benth. Fam. Pl. 677. Howard, Bot. Med. 298. Henry, Med. Herb. 23. Kart, Mat. Med. 205, 235. Wood, Class-Book, 291.

GENUS ZANTHOXYLUM

From the Greek (*zanthos*, yellow, and *xylon*, wood, so named from its color).

Synonymes.—Le Chénier (Fr.), Der Zahnschmerz (Ger.).

THE ESSENTIAL CHARACTERS.

CALYX. Sepals three - nine, small, coloring at the base.

COROLLA. Petals longer than the sepals, of the same number, or wanting.

STAMENS. Alternate with petals, of the same number, seldom twice as many; in the pistillate flowers either wanting or imperfect. *Anthers* introrse.

OVARY. Usually of the same number as sepals, stipitate, distinct, or united.

FRUIT. Baccate, membranaceous, or drupaceous, or two-valved capsules.

SEEDS. Carpels three - five, one-seeded.

THE SECONDARY CHARACTERS.

ZANTHOXYLUM. Perfect flowers. Calyx inferior, five-parted. Corolla wanting. Stamens three-six. Pistils three-five. Carpels three-five, one-seeded. Pistillate flowers like the perfect, but wanting the stamens. Staminate flowers like the perfect, but wanting the pistils.

ZANTHOXYLUM. Staminate flowers. Calyx five-parted. Corolla wanting. Stamens three-six. Pistillate flowers. Pistils three to five. Carpels equal to the number of pistils. One-seeded.

THE SPECIFIC CHARACTERS.

ZANTHOXYLUM AMERICANUM. Prickly. Leaves pinnate. Leaflets ovate, sub-entire, sessile, equal at the base. Umbels axillary.

ZANTHOXYLUM FRAXINEUM. Prickly. Leaves pinnate. Leaflets lance-oval, sub-entire, sessile, equal at the base. Umbels axillary.

THE ARTIFICIAL CHARACTERS.

CLASS DIOCIA. Stamens apart from the pistils, in different flowers upon different plants. ORDER PENTANDRIA. Trees angiospermous, polygamous, perfect and imperfect flowers on different plants and similar. Corolla wanting. Branches and petioles prickly. Stamens more than two.

NATURAL HISTORY.

ZANTHOXYLUM AMERICANUM is indigenous, growing in woods and in moist shady places, throughout the Northern, Middle, and Western States. It is not, however, very common in the Northern States, though it may be found in some neglected and marshy situations. The flowers appear in April and May, before the foliage. The leaves and capsules have an aromatic odor, recalling that of the oil of lemons.

The *Prickly Ash* is a shrub from five to ten or twelve feet in height, with alternate branches which are armed with strong, conical, brown prickles with a broad base. The leaves are alternate and pinnate, consisting of four or five pairs of leaflets and an odd terminal one, smooth above, downy beneath, with a common footstalk, which is sometimes prickly on the back, and sometimes unarmed. The leaflets are nearly sessile, ovate, acute, slightly serrate, and somewhat downy on their under surface. The flowers, which are small, dense, and greenish, are disposed in sessile umbels near the origin of the

young shoots. The plant is polygamous, some shrubs bearing both male and perfect flowers, others only female. The perfect and the staminate flowers grow upon the same tree, and the pistillate ones upon a separate tree. The number of stamens is five, of the pistils three or four in the perfect flowers, about five in the pistillate. Each fruitful flower is followed by as many capsules as it had germs. These capsules are stipitate, oval, punctate, of a greenish-red color, with two valves, and one oval, blackish seed. The berries grow in clusters on the top of the branches; they are small, black, or deep blue, inclosed in a gray shell full of little holes or dots.

The bark is thin and externally of an ash color or yellowish, internally white, and ought to be more generally known and used than it is. A good subject, consequently, for an inaugural dissertation.

Dr. Bigelow states, that the *Arsia spicata*, or Angelica-tree, which grows in the Southern States, is sometimes confounded with the *Zanthoxylum Americanum*, in consequence partly of being occasionally called *Prickly Ash*. Its bark, however, both in appearance and flavor, is entirely different from that under consideration.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The root, berries, and bark of the *ZANTHOXYLUM AMERICANUM* are all medicinal. The root, as found in the stores, is in pieces more or less quilled, from one to two lines in thickness, of a whitish color, internally somewhat shining, with an ash-colored or yellowish epidermis, which in some specimens is partially or wholly removed, and in those dried from the small branches is armed with strong prickles. The bark is very light, brittle, of a farinaceous fracture, nearly or quite inodorous, and of a taste which is at first sweetish and slightly aromatic, then bitterish and ultimately acid. The acrimony is imparted to boiling water and alcohol, which extracts the virtues of the bark. Its constituents, according to Dr. Staples, besides fibrous substance, are volatile oil, a greenish fixed oil, resin, gum, coloring matter, and a peculiar crystallizable principle, which he calls *Zanthoxylin*, but of which the properties are not designated. This substance appears to be identical with that discovered by Chevalier and Pelletan in the bark of another species (*Zanthoxylum circa-Herculis*), and which they have termed *Zanthoxypierin*; both these are closely allied to piperine, and both, like that substance, probably owe their sensible properties to the presence of volatile oil.

The bark of the *Prickly Ash* is an energetic stimulant, and has acquired a considerable reputation as a remedy in chronic rheumatism, and it is also advantageously prescribed in gouty affections. Taken in full doses, it produces a heat in the stomach, a tendency to perspiration, with more or less general arterial excitement, and consequently a relief to rheumatic pains. Twenty grains of the powdered bark may be taken three times a day in powder, or an ounce may be boiled in a quart of water and the decoction taken in the course of twenty-four hours. It is, however, more generally used in combination with sarsaparilla and other articles, forming a syrup.

A strong decoction of the bark is also used with great success as a wash for old and foul ulcers, and especially mercurial sores, which it always greatly cleanses and disposes to heal. The value of this remedy is attested by numerous instances of its success published in the London Medical and Physical Journal.

The fresh juice obtained from the root of the *Prickly Ash* is an excellent remedy in that painful complaint called by the country people the dry colic. This medicine causes a profound and composed sleep, when all sense of pain and other distressing symptoms vanish. Dose, two spoonfuls of the juice every two hours. To render the cure complete, give an infusion of the juice as a diet drink. The juice, preserved in spirits of any kind, is also said to remove the most obstinate epileptic fits. Dose, a wineglassful to be taken morning and evening.

The berries are esteemed a good remedy in intermittent fevers and in colics: they may be used in spirituous or watery infusions; and in agues, after proper evacuations have been effected, they may be drunk during the intervals of the fits, and in three or four days they will very generally produce beneficial effects.

"An internal and protracted use of this medicine has, in several instances, produced salivation," — *Beuch.*

The bark of this shrub is of the most importance and value. It is cleansing, antiseptic, and strengthening; it promotes all the secretions; it is an excellent alterant, and a good substitute for cayenne; it is also a powerful and permanent bitter stimulant, and invaluable in bitters, where also the seeds should always be added, as they are warming and aromatic. On account of its universally acknowledged good effects, it should, in fact, enter into compositions generally.

The powder is administered in doses of from ten to twenty grains, but the most common form is in decoction, made by boiling an ounce in three pints of water down to a quart, of which one half is to be taken in divided doses in twenty-four hours.

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It is the ordinance of Heaven that no man greatly distinguished for his talents and virtues should die, without leaving an important legacy to the world—the *legacy of his own character*. This is designed by Providence to be in the place of his living example and active efforts, to plead the cause of virtue after the eloquent tongue has been palsied by death, and to stimulate to noble enterprises on earth, when the spirit has entered on a higher sphere of action in heaven. Each generation, therefore, is bound to preserve some substantial record of its truly illustrious men; such as have associated high intellectual and moral attainments in the same character, have sustained through life eminent usefulness, and have contributed most under God to form its character. Men of this stamp will indeed do much, even without the aid of such a record, to guide the destinies of posterity; because such is the power of great talents, and such the connection of moral actions with each other, that from the life of every man of distinguished greatness and excellence there is a tide of influence sent forth which must force its way through every obstacle down the track of coming ages. Still the interests of society demand, that these influences be widened and perpetuated, by the erection of permanent memorials of departed greatness.

It is only necessary to refer to the amount and value of the intellectual habits and attainments of the man who fully acted up to the spirit of his motto, "*The measure of life is not the number of its days and years, but the amount of its virtues and duties performed.*" In the period of a life not unusually long, Dr. Jno. M. Good mastered many entirely distinct departments of knowledge;—he ranged through the whole field of oriental, classical, and modern literature, and made himself familiar not only with the Hebrew, Syriac, Persian, Greek, Latin, German, Italian, French, Spanish, and English languages, but also with the contents of most of the principal works in each. He also became a thorough scholar in various departments of natural and moral science, as his "*Book of Nature*" and other similar productions evince him to have been. He gained the highest rank in the profession of medicine and surgery, both in theory and practice, and contributed one of the most valuable works, "*The Scribe or Manuscript,*" to that profession, which it has ever received. He also enlarged his mind with copious practical knowledge, on almost all subjects of interest or utility. He engaged in making translations of the Book of Job, and the Psalms, and Solomon's Song, from the Hebrew—in executing his "*great work,*" *THE TRANSLATION OF LUCRETIVS FROM THE LATIN*—in publishing notes and practical commentaries on the Scriptures—in writing poetry—in delivering lectures on physical and moral science and general knowledge—in preparing memoirs—in furnishing matter for several distinguished periodicals—

and all with such success, as completely to confront the adage that "*the man of all pursuits is good at none*." And besides all this he frequently walked twelve or fourteen miles a day to attend upon so many patients as to yield fourteen hundred pounds sterling, or about seven thousand dollars a year. Distinguished as was Dr. Jao. M. Goon in his profession, his mind did not consent to expatiate alone in that, for he was scarcely less distinguished as a philosopher and as a classical and biblical scholar. He was at first a materialist and a Unitarian; but as he continued to search the Scriptures and to extend his keen and practical observation of mankind, he became more and more convinced of the Scriptural view of the character, condition, and moral relations and destinies of man, of the proper truths and principles of Jesus, and of the way of salvation through these. His dissatisfaction of course increased with the erroneous views which he had adopted, until his mind and heart broke from their servitude and ascended to God in sentiments of evangelical love and harmony. He became a sound and consistent believer in Jesus. He lived about twenty years after this change took place in his religious views, and by the grace of God was conducted to a correct apprehension and an adoring love of the sublime truths and principles of the Gospel of Jesus.

But while it is due alike to the memory of great and good men, and to the interests of posterity, that a faithful account of such characters should be preserved and transmitted, it is important that the proper time for performing this service should not be overlooked. A work of this kind may lose in a great degree its legitimate interest and effect by being delayed too long; for no record of departed excellence or greatness can come with much authority, unless it embodies the personal recollections of the writer, or at least is formed of materials of undisputed authenticity. The proper time for erecting such a monument as is here contemplated to the illustrious dead, is when they have been in the grave long enough to have their characters looked at with due impartiality, and yet not so long as to have thrown them in any degree into the mist of uncertainty. The biographer of such men is laboring for the world and for successive generations; and he should have every external facility, as well as every quality of mind and heart, which his important office demands.

The views which are here expressed have led to the endeavor to satisfy the reasonable demands of the Christian and literary public, by the reproduction of a work (except some important additions) from the pen of an author long the intimate friend of Dr. Goon, and probably better qualified to do justice to his character than any other man, and which will carry down to distant generations the example and influence of one of the brightest characters of the age.

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